

PRACTICAL PHOTOSHOP CS6

LEVEL 1



Practical Photoshop® CS6
Level 1

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Practical Photoshop® CS6, Level 1
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Practical Photoshop CS6, Level 1©

Welcome

The authors of this book are all current or former community college instructors, and Adobe Certified Instructors in Adobe Photoshop®. Together, we have taught Photoshop to thousands of students, both in traditional classrooms and online. In our 16+ years of teaching Photoshop, we have learned first hand from our students which Photoshop skills they feel are the most essential, and also which Photoshop techniques they find the most difficult to master. We have used our students' feedback to determine both the topics and the step by step tutorials in Practical Photoshop CS6. Marilyn Kelly, EdD, has carefully edited the book to make it as pedagogically-sound as possible.

The tutorials do not cover everything in Photoshop—instead we have tried to distill the important terms, skills, and techniques you will need to open, edit, create, save, and print Photoshop documents.

You will be able to download all the images used in this book from the Practical Photoshop site, http://www.practical-photoshop.com. The student files are big—most of them are high resolution so that they will print nicely. They are royalty free. We hope you will enjoy them.

We have done our best to fully edit the content for this book, but a couple of errors may have slipped in. Check the accompanying Web site: http://www.practical-photoshop.com for any corrections we might have made, and also to report any to us. Also, on the site, there will soon be videos to accompany the tutorials. Consult your instructor for specifics.

Let us leave with some thank yous:

- To the students, faculty, and staff of Santa Rosa Junior College who have been such enthusiastic Photoshop users, learners, and educators.
- To Bruce Purcell and Michael Starkey for all their efforts as members of the Photoshop team that made this book possible.
- To Sutter Laird for his technical support.

Barbara, Donald, Corrine, Windsor, and Marilyn

Practical Photoshop CS6, Level 1©

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Practical Photoshop CS6, Level 1©
Overview and Tutorial Guidelines

Adobe Photoshop® is the industry standard software for image editing. It is both very powerful and very complex. As you learn to master its complexity, you will discover that Photoshop is a magical program that should come with a warning label:

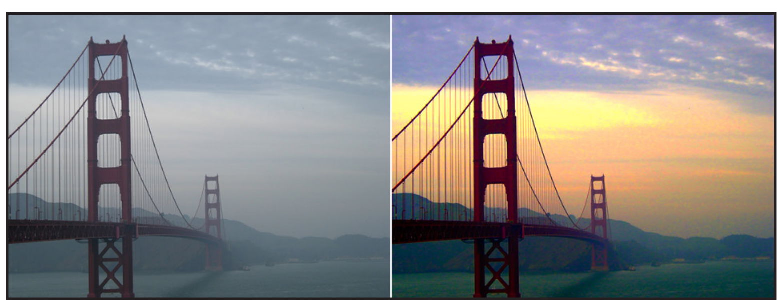
Photoshop is too much fun. It will swallow your time.

We tutorial authors have been teaching Photoshop both in-person and online since 1996. Originally, our Photoshop students were predominantly graphics professionals who needed retraining in digital imaging both for printed publications and for the newly emerging World Wide Web. Now, with digital cameras and camera phones everywhere, Photoshop has become one of the most popular computer classes we teach. In addition to graphics professionals, our students range from high-school enrichment students, to Web site developers, and to hobbyists of all ages.

Our students use Photoshop to:

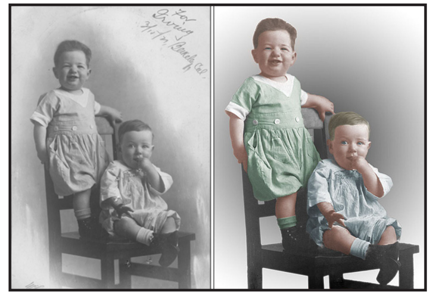
- Adjust scanned or digital camera images for better screen display or printing. Photoshop lets you easily change the file format of graphical images to use as email attachments, on Web pages, or in printed documents such as brochures and newsletters.
- Edit photographs, especially those taken with a digital camera or digitized with a scanner. Photoshop becomes an electronic darkroom.

  On the left, you can see the original digital photograph of the Golden Gate Bridge, taken by Lorene Romero. The right side shows the same photograph with a quick Photoshop edit.



- Restore old and/or damaged photographs.

  The original 1921 photo, on the left, was scanned into Photoshop, restored, and colorized. You will learn to do this before the course is over.



- Modify images or start from scratch to create original artwork. Photoshop becomes an electronic playroom both for painting with pixels as well as for working with scalable objects like lines, shapes, and text. This cat face artwork was done by Nicholas Ogg.



Because Photoshop is so complex, there are often several ways to accomplish the same task. To avoid overwhelming you with these variations, we typically guide you through a single method and introduce additional methods and shortcuts later in the book.

Tutorial Guidelines

At the beginning of each tutorial you will find an **Objectives** section so you know what you will accomplish by completing the tutorial. There will also be a list of practice files for you to download to follow along with the guided exercises.

At the end of each tutorial you will find an **On Your Own** section where you can continue your study of Photoshop, or further develop skills or concepts introduced in the tutorial itself. There are also additional resources as appropriate.

Graphics or computer terminology known as **KEY TERMS** are set off in bolded all caps when they are defined.

Computer menu commands and keystrokes are set off in **boldface** as are panels, bars, buttons, and other workspace elements.

Using These Tutorials with Photoshop

Photoshop menu commands often involve drilling down from a main menu to one or more submenus. We have used a greater-than sign (**>**) to show you the sequence to follow.

For example, **Image > Adjustments > Black & White** directs you to first click the **Image** menu, then the **Adjustments** submenu, and finally the **Black & White** command to turn a color photo into a black and white (grayscale) photo.

All Windows computers and modern Macintosh computers (except older laptops) use computer mice or trackpads with (at least) two mouse buttons. If your mouse has two or more buttons:

- **Click** means to press and release the left mouse button.
- **Right-click** means to press and release the right mouse button.
- **Drag** means to press the (left) mouse button and keep it down as you move the mouse. If your computer only has a one button mouse or a single trackpad button, you will need to **CONTROL-CLICK**: press and hold the **control key** and then click the single button to simulate a right-click.
- **Press** means to press one of the keys on the keyboard.

Photoshop often uses **MODIFIER KEYS** on the computer keyboard along with mouse clicks to extend the capabilities of those keys.

Windows typically uses the **ctrl**, **alt**, and/or **shift** keys.

Macintosh typically uses the **command** (or ⌘), **option**, **control**, and/or **shift** keys**.**

The **plus sign** (**+**) indicates when a modifier key is required. For example, you might **alt + click** (**Win**) or **option + click** (**Mac**) to perform a particular function.

When you use modifier keys, you are supposed to press the key(s) and click the mouse at the same time. Timing can be tricky. You may find it easier to first press the modifier key(s), then click or drag the mouse, and finally to release the mouse button before releasing the modifier key(s).

The Photoshop Application

Adobe produces two image-editing applications: **ADOBE PHOTOSHOP ELEMENTS**® and the full **ADOBE PHOTOSHOP**®. **Photoshop Elements** is a less expensive, consumer level graphics-editing application. Elements is terrific for simple image editing, but does not have nearly the range of capabilities as the full Photoshop application. Elements offers a good training ground for moving into the professional application, as both applications use similar working environments and approaches to image production and editing.

Adobe first acquired Photoshop in 1990. Since that time, there have been several improvements, or **UPGRADES**. The most current version of Photoshop, released in May 2012, is **Photoshop CS6** (technically Photoshop 13).

There are two **Photoshop CS6** applications, **Standard** and **Extended**. The **Extended** version adds tools for editing 3D and motion-based content and for performing image analysis. If you purchase Photoshop as part of an educational suite, you will receive **Photoshop Extended**. These tutorials focus on the **Standard** version of CS6, but all the screen shots have been taken in **Photoshop CS6 Extended** so you might see some additional screen elements that are not on your screen. We have prepared these tutorials for **Photoshop CS6 Standard**—not for earlier versions of Photoshop nor for **Photoshop Elements**.

CS stands for **Creative Suite** because you can either purchase Photoshop as a stand-alone application, or as part of a collection of graphics applications. **Adobe Photoshop CS6** contains just the stand-alone Photoshop application, plus **Adobe Bridge®** to help you manage your images. The various **Adobe Creative Suites** bundle Photoshop with additional Adobe applications, depending on which suite you choose. You can get more information about which applications are bundled with the various suites on the Adobe Web site:
http://www.adobe.com/products/creativesuite/design-web-premium.edu.html.

If you are a student or an educator, be sure to take advantage of Adobe's very generous academic prices: http://www.adobe.com/education/products/creativesuite/design-web-premium.edu.html.

Finally, new to CS6, you can obtain your Adobe software by monthly or annual subscription to the **Adobe Creative Cloud**. Here are the specifics: http://www.adobe.com/products/creativecloud.edu.html.

Hardware and Software Requirements

Photoshop works equally well with either Macintosh or Windows computer systems. Image editing requires lots of processing power, and Photoshop works much more swiftly on newer, faster computers. Before purchasing Photoshop, make sure that your computer hardware and software are adequate.

To use Photoshop effectively, you will need a fast computer, a modern operating system, and enough RAM and hard disk space to manipulate your images as you edit and save them. And, of course, you will need the Photoshop application itself. Let's look at each of these requirements in more detail.

1. A fast, powerful computer with a current operating system:

   Macintosh

   Multicore Intel processor with 64-bit support (no Power PCs)

   Mac OS X v10.6.8 or v10.7

   2GB of available hard-disk space for installation; additional free space required during installation (cannot install on a volume that uses a case-sensitive file system or on removable flash storage devices)

   Windows

   Intel® Pentium® 4 or AMD Athlon® 64 processor

   1GB of available hard-disk space for installation; additional free space required during installation (cannot install on removable flash storage devices)

   Microsoft® Windows® XP* with Service Pack 3 or Windows 7 with Service Pack 1

2. Enough RAM (random access memory) and hard disk space to manipulate your images as you edit and save them.

   1GB of RAM is what Adobe says. In our experience, 2 GB of RAM should be the minimum, and more is better.

3. Additional requirements:

   1024x768 display (1280x800 recommended) with 16-bit color and 256MB (512MB recommended) of VRAM (video random access memory)

   DVD-ROM drive

   OpenGL 2.0–capable system

   This software will not operate without activation. Broadband Internet connection and registration are required for software activation, validation of subscriptions, and access to online services. *Phone activation is not available.*

Creative Suite Requirements

If you are installing one of the Creative Suite bundles, not just Photoshop and Bridge, the hardware

requirements are somewhat greater. For either platform, you will need at least 3 GB of RAM (8 desired) and more than 7 GB of free, contiguous hard disk space. The specifics are listed on the Adobe Web site: http://www.adobe.com/products/creativesuite/designstandard/tech-specs.edu.html.

Setting up your Monitor for Photoshop

Computer monitors display patterns of colored square dots called **PIXELS**. Because those pixels are very small, we don't see them individually, but instead see the bigger "picture."

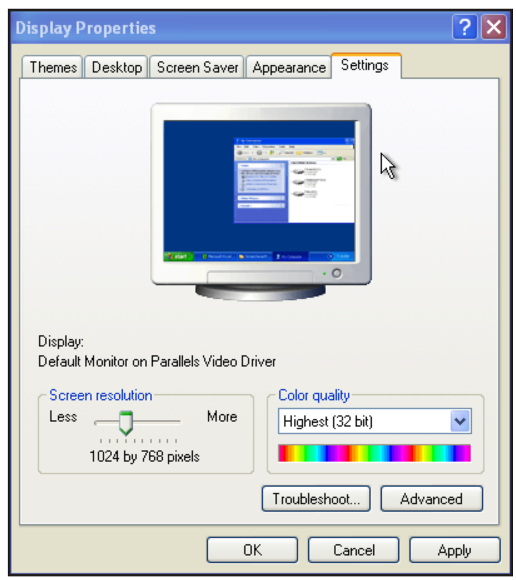
MONITOR RESOLUTION measures how many pixels fill the screen horizontally and vertically. **640 x 480** means that the monitor shows a grid of **640 pixels** across and **480 pixels** down. When you increase the monitor resolution, everything on the screen becomes smaller so you can fit more things on it. Photoshop uses many items to help you edit images, and you will need to set your monitor resolution to at least **1024 x 768** pixels to see and use all those items.

COLOR DEPTH sets how many different colors your monitor can display. For most Photoshop images, your monitor should be set to **millions of colors** (also known as **24-bit color**) so that color images look like true photographs on your screen.

Here is how to check your monitor resolution and change it if needed:

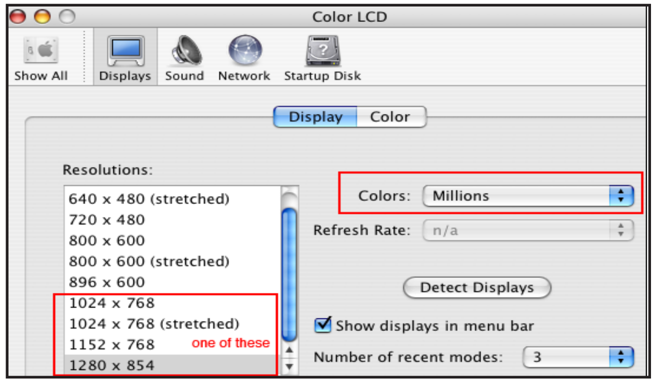
Windows

1. Close or minimize any open applications so that you can see your computer desktop.
2. **Right-click** a blank area on the desktop to reveal its context menu.
3. Choose **Properties** from that context menu to view the **Display Properties** dialog box.
4. Click the **Settings** tab.
5. Check your resolution and color settings. **Color quality** should be **Highest (32 Bit)**, and **Screen resolution** should be **1024 x 768 pixels** or higher.
6. Click **OK** if settings were changed, otherwise click **Close**.



Macintosh

1. Choose **Apple** ( )> **System Preferences**.
2. In the **Hardware** group, click **Displays**.
3. Check your resolution and color settings, and change if necessary. Set **Colors** to **Millions**, and **Resolution** to **1024 x 768 pixels** or higher (1280x800 recommended).
4. Choose **System Preferences > Quit System Preferences**.



Photoshop CS6 Installation

Whether you install just **Photoshop CS6** and **Bridge CS6**, or one of the **Creative Suites**, you will need to download the software from the Adobe Web site and follow the on-screen prompts to install the software.

Photoshop CS6 for Macintosh is a **64-bit** only application. In Windows there are two modes, **32-bit** and **64-bit**. When you install **Photoshop CS6 for Windows**, if your hardware and operating system supports it, you can install the **32-bit**, the **64-bit**, or both. The **64-bit** version will run more quickly and use as much RAM as allotted to it. The **32-bit** version can only use 3.2 GB of RAM.

Read more at: http://helpx.adobe.com/photoshop/kb/64-bit-os-benefits-limitations.html

A Few Tips Before You Begin

- If you are upgrading from a previous version of Photoshop, keep your serial number handy—you may need it to complete the software installation.
- No Adobe applications or Web browsers should be open on your computer as you install.
- If desired, uninstall and remove earlier versions of Photoshop and Bridge before you install CS6.

  You can run Photoshop CS6 on the same computer as earlier versions of Photoshop, Bridge, or Elements. However, those older versions take up valuable hard drive space, and you can get confused about which version of the software you have open. Unless you will need the older versions, remove them before you install CS6.

  Windows: Use the **Adobe Photoshop Uninstaller** in the **Add or Remove Programs** utility in

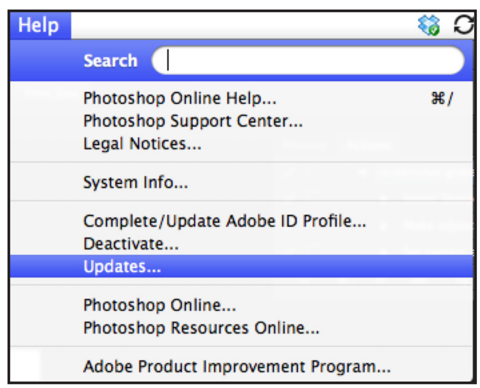
Windows to remove Photoshop from the computer. If that does not work, you can uninstall manually using these instructions from Adobe: http://www.adobe.com/cfusion/knowledgebase/index.cfm?id=331405.

Macintosh: Use the uninstaller in the **Applications > Utilities> Adobe Installers** folder to uninstall Photoshop CS3-5 or one of the CS3-5 suites. For earlier versions of Photoshop, follow Adobe's non-automatic instructions: http://www.adobe.com/cfusion/knowledgebase/index.cfm?id=331296

Activation & Deactivation

Single-user licenses of Photoshop CS6 require that you activate the software online before using it for more than 30 days after its first use. According to Adobe, http://www.adobe.com/go/activation, this is a "simple, anonymous process." A single-user license allows you to place Photoshop CS6 onto two computers —such as work and home, or a desktop and a laptop—with the assumption that you will use Photoshop on only one machine at a time. If you want to install the software on an additional computer, you must first deactivate it on one of the original computers. Within the Photoshop application, choose **Help > Deactivate**.

Checking for Free Updates



The Creative Suite applications are quite complicated, and although Adobe works hard to make them perfect, problems sometimes arise. When Adobe fixes these problems, or adds features that were not included in the shipped software, **UPDATES** become available for download and installation.

1. Open any of the Creative Suite applications.
2. Choose **Help > Updates** to go online to the **Adobe Updater** to check your computer and see if any updates are available.
3. If any updates are available, you will be instructed to download and install them. ***You probably will not be able to do this if you are working in a computer lab or network.***

Adobe ID

An **Adobe ID**, plus your password, gives you access to special membership benefits on Adobe.com. It is required to complete your software installation and essential for viewing special training and help features for Creative Suite 6 applications. For more information see:
http://helpx.adobe.com/x-productkb/policy-pricing/account-password-sign-faq.html.

Uninstalling Photoshop CS6

When you install your software, uninstallers are placed in your system. In Windows, the **Add or Remove Programs** control panel should allow you to uninstall Photoshop or other Creative Suite applications. On the Mac, by default, the uninstallers are placed inside the **Applications > Utilities > Adobe Installers** folder.

The Photoshop Settings File

Application **PREFERENCES** are settings for window and panel locations, tools, dialog boxes, and color settings. Each time a tool, panel, or command setting is changed, Photoshop saves the new configurations in the **Adobe Photoshop Settings File** on the computer's hard disk.

Application **DEFAULTS** are the original settings created when the program was first installed. As you learn Photoshop, you may want to restore these defaults each time you launch the program so that your working environment is consistent, and it matches the environment described in these notes.

Occasionally, the **Adobe Photoshop Settings File** becomes corrupted, and Photoshop works very slowly or otherwise misbehaves. Restoring the **Adobe Photoshop Settings File** can often solve these problems.

To Restore the Adobe Photoshop Settings File

1. Check to be sure that Photoshop is not already open; exit or quit the application if necessary.

   If Photoshop is open, you will see its name on the Windows Taskbar, or its icon in the Mac OS X Dock with a triangle underneath it.

2. Locate the Photoshop application icon in the Start menu (Windows) or the Applications folder (Mac) on your hard drive.

3. Position your fingers just over the modifier keys, but do not press the keys. Capitalization matches the keyboards.

Windows : **Ctrl+ Alt + Shift**





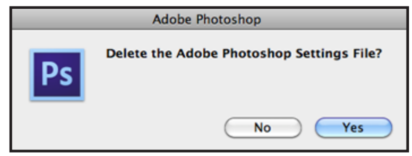
Macintosh : **command + option + shift**

The **Command** key, lower right here, is the one with the Apple logo and the cloverleaf.

The **fn** key shown here is only found on laptops and some Mac keyboards.

4. Start Photoshop and then immediately press the modifier keys and keep them pressed until you see this confirmation dialog box. If you don't see it, your keystroke timing was off. **Quit** or **Exit** Photoshop and try again.

5. Click **Yes** to delete the (old) **Adobe Photoshop Settings File** and replace it with the default settings file.



6. If you see a dialog box asking to configure your color settings, click **No** to retain the current color settings. You will not see the additional dialog box unless your color settings have been specified.

Download Tutorial Files: "coming soon"

Practical Photoshop CS6, Level 1
Tutorial 1: Photoshop Basics

In this tutorial you will explore the Photoshop CS6 workspace, customize it to serve your needs, and use Photoshop to modify a photograph taken with a digital camera. The tutorial is broken up into step-by-step Guided Exercises interspersed with explanatory sections. As you work through this introductory tutorial, remember that Photoshop is a very complicated application that is best learned through repetition. The concepts and skills you learn here will be reinforced and expanded as you proceed through the tutorial series. ***Don't expect to master everything the first time through!!!***

Objectives

- Identify the major regions of the Photoshop workspace and explain the function of each: **Menu** bar and **context menus**, **Options** bar, **Tools** panel, panels, and document window(s).
- Use the **Workspace** menu to use and change built-in workspaces.
- Manipulate and customize panels.
- Open and navigate a Photoshop document with menu commands, the **Zoom Tool**, the **Hand Tool,** and the **Navigator Panel**.
- Create a layered Photoshop document from a provided starting image.
- Use the **Undo** commands and the **History** panel to reverse document changes.
- Explore **Photoshop Help**, and use it to find out more about the tools in the **Tools** panel.

The Photoshop Workspace

A **WORKSPACE** consists of the panels, menus, and keyboard shortcuts that you use with Photoshop.

Guided Exercise 1.1: Navigate the Photoshop Workspace

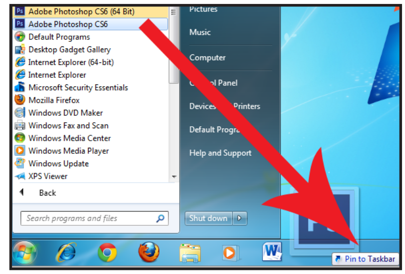
In this guided exercise you will use Photoshop to open and work with **01-pumpkin.jpg** that you downloaded at the end of the Overview and Tutorial Guidelines chapter. If you have worked on a previous version of Photoshop, the first thing you will notice when opening Photoshop CS6 is how dark it is. Adobe has completely redesigned the interface for CS6 to make it more similar to **Adobe Lightroom®**.

1. Open the **Adobe Photoshop CS6** application.

Windows

To launch Photoshop, choose **Start > All Programs > Adobe Photoshop CS6**.

If you have installed Photoshop as part of the Creative Suite, you may have one more submenu to wade through. If you are working in a lab computer, there may be shortcuts on the **Desktop** or the **Taskbar** for your use.



On your own system you can add Photoshop (and Bridge) buttons to the **Taskbar** by dragging the application from the start menu onto the **Taskbar**. When you are in the correct location, you will see the **pin to taskbar** box. Click it.

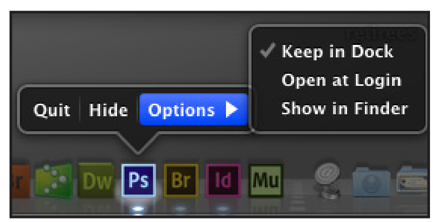
Windows 7 instructions: http://windows.microsoft.com/en-us/windows7/products/features/windows-taskbar
Windows XP instructions: http://tinyurl.com/7jmg5ru

Macintosh

a. Locate the **Adobe Photoshop CS6 application icon**. By default it is inside the **Adobe Photoshop CS6 folder** inside the **Applications** folder on your startup hard drive.

b. Double-click the **Photoshop CS6 application icon** to open Photoshop.

c. Press the **Photoshop icon** in the **Dock** to reveal the **Dock Menu** and choose **Keep in Dock**. Now, even when you quit Photoshop, its icon will remain in the **Dock**. You simply click its **Dock** icon to open Photoshop.



d. If desired, follow the same procedure to open **Adobe Bridge CS6** and keep it in the **Dock** as well.

2. Reset the **Essentials** workspace, all tools, and the default **Foreground** and **Background** colors.

NOTE: We are giving you the specifics here, but will not repeat these specifics for future guided exercises.

a. Choose **Essentials** from the **Workspace Switcher** menu if necessary and then choose **Reset Essentials** from the **Workspace Switcher** menu.

b. **Right-click** the icon of any tool in the **Options** bar and choose **Reset All** from the context menu that appears.

c. Click the **default colors** button in the **Tools** panel **color picker**.

3. Open **01-pumpkin.jpg** in Photoshop:

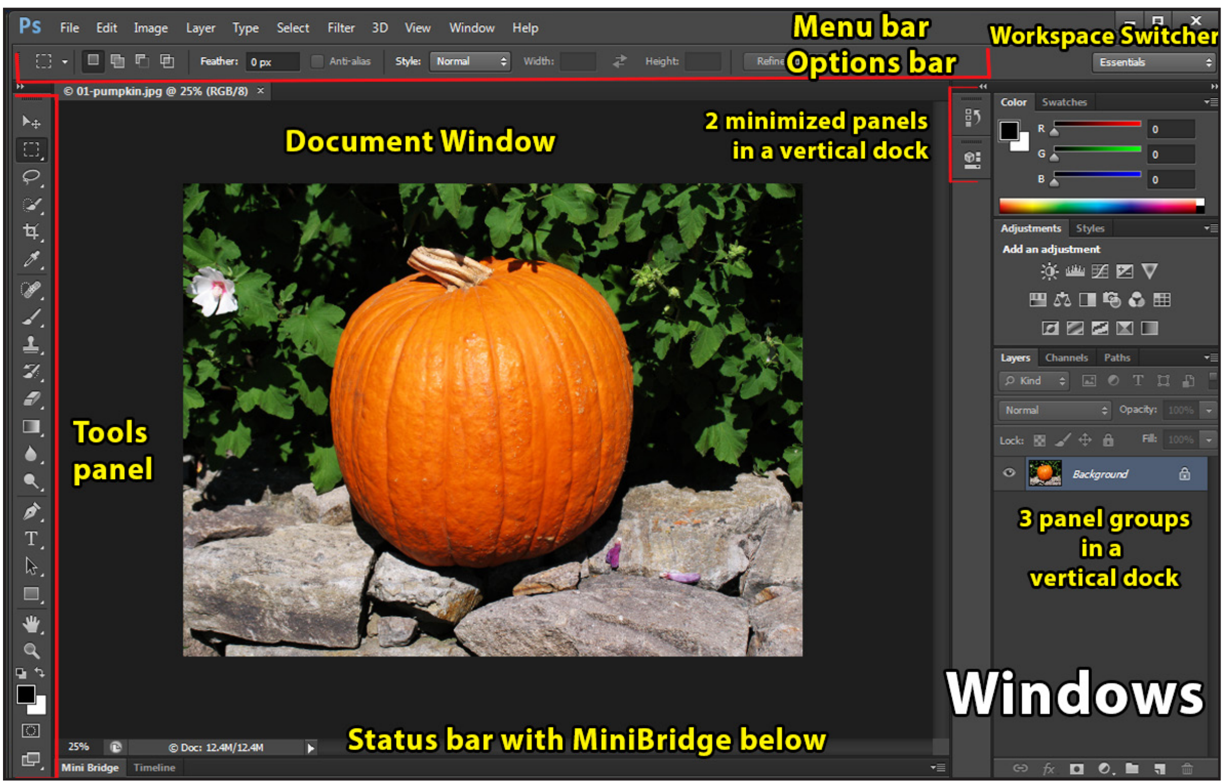
a. Choose **File > Open** to see the **Open** dialog box.

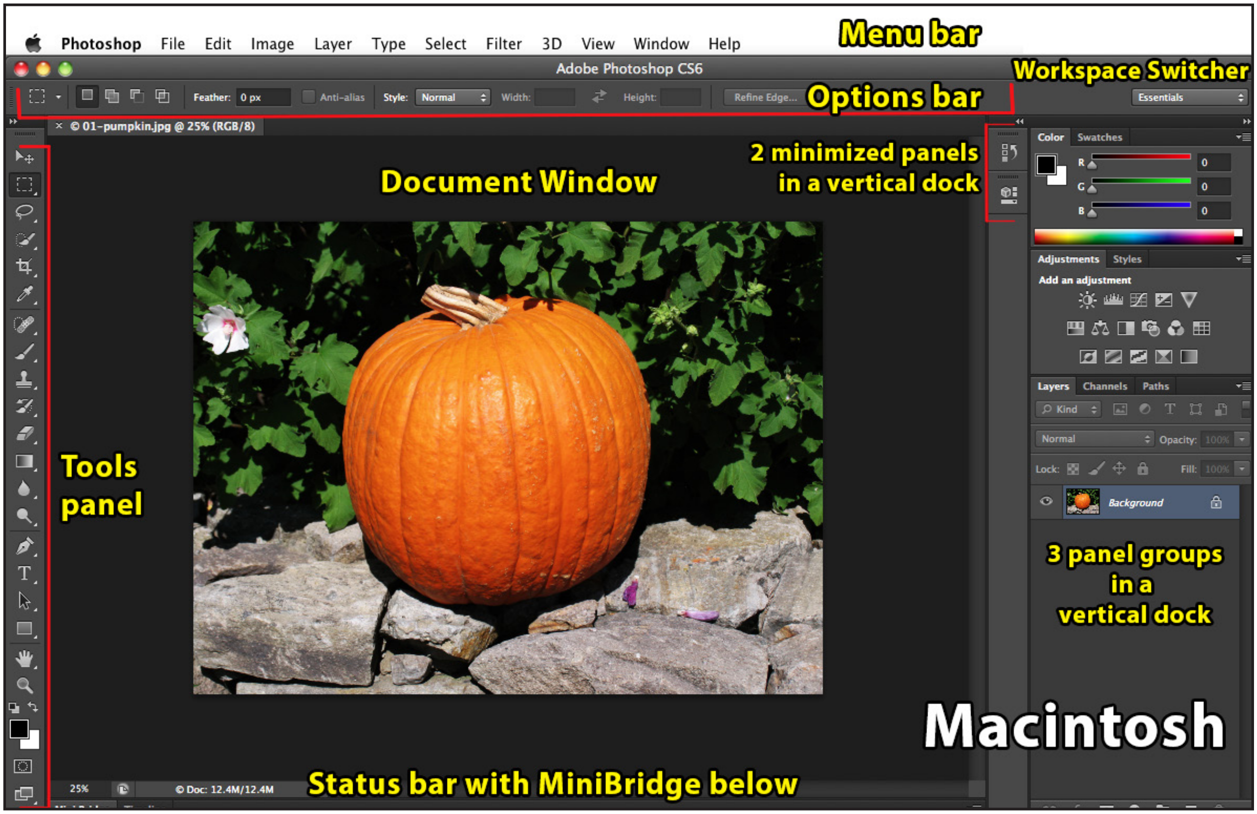
b. Navigate to **01-pumpkin.jpg** and click its name to select it.

This large file, taken with a digital camera, has enough pixels for a high-quality printout on an ink jet or color laser printer. The **JPEG** format shrinks down files when saved to disk to minimize the time it takes to download those files. The image is compressed to save disk space. It takes up less than 1 MB of disk space. When opened up in Photoshop, the image is uncompressed and takes up over 12 MB of memory.

4. Click **Open** to open **01-pumpkin.jpg** inside its document window in Photoshop.

5. Locate the major landmarks of the Photoshop workspace:





- The **Application frame**, always present in Windows as part of the operating system, surrounds all application components with a dark gray frame so that the entire workspace can be treated as a single unit. On the Mac you can view or hide the **Application Frame** from the bottom of the **Window Menu**. By default, it is visible.
- The **Menu** bar at the top of the workspace provides a series of menus, each of which is an organized list of Photoshop commands.
- **Docks** are columns along the sides of the application or screen window that hold tools or panels.
- **Panels** are groupings that appear by default along the right edge of the workspace.
- The panel docked by default to the left edge of the workspace contains the tools that you use to create and edit Photoshop images.
- The context-sensitive **Options** bar just beneath the **Menu** bar holds settings that are specific to the chosen or **ACTIVE** tool.

- Each open Photoshop document is contained within a **document window**.
- The **Workspace Switcher** lets you choose from predefined workspaces and configure your own custom workspaces, as you will do later in this tutorial.

6. Observe how the **Options** bar contents change when you change the active tool from the **Hand Tool** to the **Zoom Tool**:

   a. Click the **Hand Tool** in the **Tools** panel to choose or **ACTIVATE** it.

   When the entire image is too big to be visible in the document window, the **Hand Tool** moves or **PANS** the image to display hidden regions of it.



   - Identify the icon of **Hand Tool** on the left edge of the **Options** bar, indicating that the **Hand Tool** is the active tool.
   - Notice that the **Options** bar contains a check box, **Scroll All Windows**, and four buttons: **Actual Pixels**, **Fit Screen**, **Fill Screen**, and **Print Size**. You will use these buttons later in this tutorial.

   b. Click the **Zoom Tool** in the **Tools** panel.

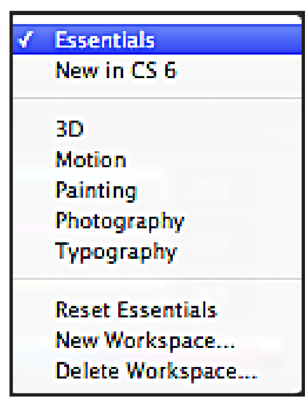


   - The **Options** bar for the **Zoom Tool** contains similar check boxes and buttons to the **Move Tool** with a few additional buttons and check boxes.



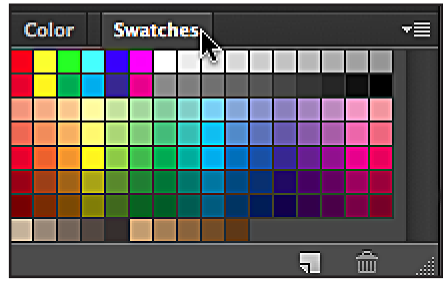
7. Use the **Workspace Switcher** on the far right end of the **Options** bar. The **Workspace Switcher** remains in that location no matter what tool is chosen.

   Photoshop CS6 ships with several preset workspaces. The default, **Essentials**, shows the most commonly-used panels, and hides those that you are less likely to use. Task-specific workspaces such as **Design**, **Painting**, and **Photography** display the panels you are most likely to use when performing one of those tasks.



   a. To begin, the **Workspace Switcher** should display **Essentials**. If it is set to a different workspace, click the **Workspace Switcher** to display the **Workspace** menu and choose **Essentials** from the top of the menu.

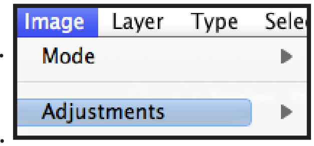
b. Modify your workspace:



1) On the upper right side of the screen, click the **Swatches** panel tab to bring the **Swatches** panel forward.

2) Click other hidden panel tabs as desired to see what they contain.

c. Choose a different workspace:



1) Choose the **New in CS 6** workspace and examine the **Image** menu. **Adjustments** is highlighted to let you know that something in its submenu has been introduced in or improved for Photoshop CS6.

2) Look at other menus to see what might have been introduced or improved for CS6.

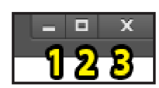
d. When you are done exploring, click the **Workspace Switcher** and choose **Essentials**. Click the **Workspace Switcher a second time and** choose **Reset Essentials** near the bottom of the menu to return the panes to their locations before you changed to the **New in CS 6** workspace.

It was necessary to use the **Workspace Switcher** menu twice because the **Reset ______** command only resets the currently chosen workspace.

TIP: *Unless otherwise specified, periodically reset the **Essentials** workspace to keep your workspace consistent with the book.*

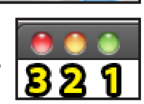
8. Explore the **Menu** bar and identify the **Minimize**, **Close**, and **Maximize/Restore** buttons for your operating system. The standard version of Photoshop does not include the **3D** menu. That is not a problem as we will not cover **3D** in this course.





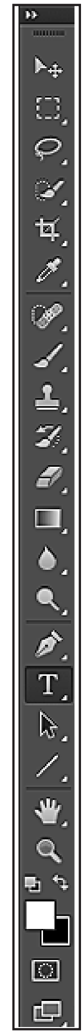
WINDOWS:, the **Minimize** button (**1**) reduces the entire Photoshop application to the Taskbar button shown here, the **Maximize/Restore** button (**2**) toggles between having the Photoshop application cover the entire screen and appearing in a smaller window, and the **Close** button (**3**) exits Photoshop entirely.





MACINTOSH: the **Minimize** button (**2**) reduces the **Application Frame** to an icon on the **Dock**, the **Maximize/Restore** button (**1**) toggles between having the Photoshop application cover the entire screen and appearing in a smaller window, and the **Close** button (**3**) closes the active document window, but leaves the Photoshop application open.

On either system, after you minimize, simply click the minimized button on the **Taskbar** or **Dock** to reopen the **Application Frame**.



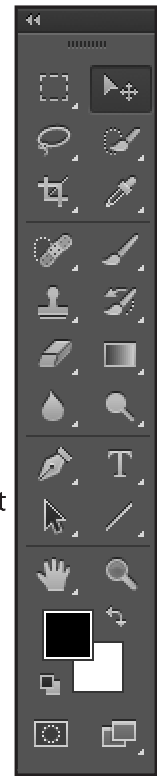
9. Manipulate the **Tools** panel:

   a. Locate the **Tools** panel, docked by default to the left edge of the **Application Frame**. The screen picture shown here is of the Photoshop Extended **Tools** panel. If you do not have the Extended version of Photoshop, you will have fewer tools towards the bottom of the **Tools** panel.



   By default, the **Tools** panel is one long skinny column.

   b. Click the **Collapse/Expand** button (double triangle) at the top of the **Tools** panel to expand its width to two columns. Click the **Collapse/Expand button** again to collapse the **Tools** panel to a single column.



   c. View a **TOOL TIP**, a small yellow box that contains information about the item your pointer hovers over. You will find tool tips throughout the Photoshop workspace.



      1) Without clicking, point the mouse to the tool with an eraser on it to show its yellow tool tip.

      2) The **Eraser Tool's** tool tip is **Eraser Tool (E)**. The tool tip displays both the name of the tool and in parentheses its **KEYBOARD SHORTCUT**, the key you can type from the keyboard to choose that tool. Notice that the **Eraser Tool** has a box around it to indicate that its tool tip is the one you see.

   d. Tools that contain a little triangle in their lower right corner hide other tools. Choose a tool hiding under the **Eraser Tool**.

      1) Click and hold the pointer down on the **Eraser Tool** to reveal the menu of tools organized under it. The **Background Eraser Tool** and the **Magic Eraser Tool** hide under the **Eraser Tool**.



      2) Drag down the list to highlight the **Background Eraser Tool** and release the pointer (mouse) button.

Now the **Background Eraser Tool** shows in the **Tools** panel, with the other eraser tools hidden beneath it.

3) Choose the (standard) **Eraser Tool** as you will not use the specialty erasers until the end of this course.

10. Examine the top of the document window, shown for each individual document open in Photoshop. By default, it contains an informational tab for each open document.

MAC	WINDOWS
	

- The **Close Box** (**x**) to close the document window.
- The copyright symbol (©) if the image is copyrighted and the name of the file, **01_pumpkin.jpg** here.
- The zoom or magnification level. **@ 25%** indicates that only one quarter of the pixels are showing; the other three quarters of the pixels are hidden to view the entire document in the document window without scrolling.
- If a document has more than one layer, and a layer other than the **Background** layer is active, its name will also show at the end of the **Title** bar. Here we added **Layer 1** to the document, and **Layer 1** is active.: 

- The image mode, **RGB/8** in this document, indicates that this is an image that uses the **RGB** or red-green-blue image mode, with **8** bits to each color channel. (We won't cover 16 bit or bigger files in this course.)

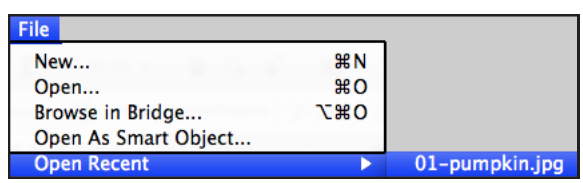
11. Use the **Open Recent** command to close and reopen the pumpkin image.

a. Click the **Close Box** (**x**) on the edge of the **01_pumpkin.jpg** tab. If you see a warning box asking to save the document, click **No** as you should not have made any changes.



b. Choose **File > Open Recent** and choose **01_pumpkin .jpg.**

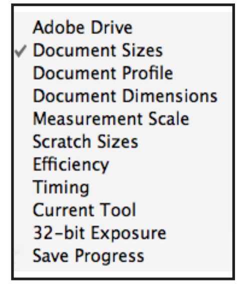
By default, Photoshop keeps track of the ten most recently opened documents. (This feature may have been turned off if you work in a computer lab.)



12. Examine the **Status** bar at the bottom of the document window.
From left to right, here is what you will see:



a. **Zoom level**, **25%** here. To change the zoom level, highlight the number, type in a new zoom percentage like **50%**, and press **Enter** or **Return**.

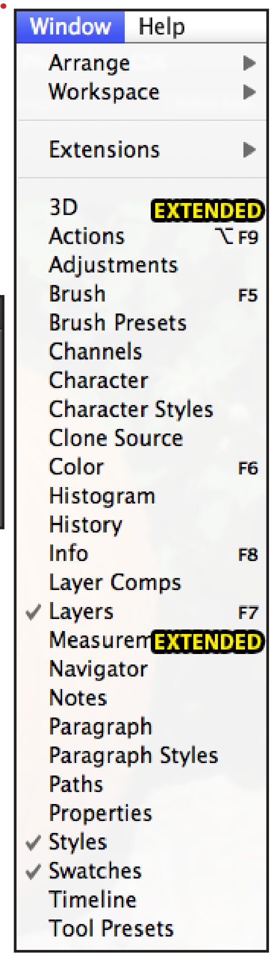


b. **Status** bar information, here Doc **12.4 M/12.4M**. This **Status** bar is set to show **Document Sizes**.

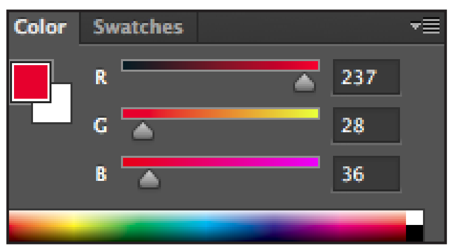
c. Click the triangle to the right of the **Status** bar information to choose a different informational category from the **Status** bar **menu**. **Measurement Scale** will only appear in Photoshop Extended, not Photoshop Standard.

d. End up with **Document Sizes** showing (checked).

Panel Manipulation & Customization



Photoshop CS6 Standard has 24 panels along with two more for the Extended version. Since you don't typically work with all these panels at once and since they would cover the entire screen if they were all visible and active at once, panels are either grouped in docks or accessible from the **Options** bar, depending on how a particular panel is used.



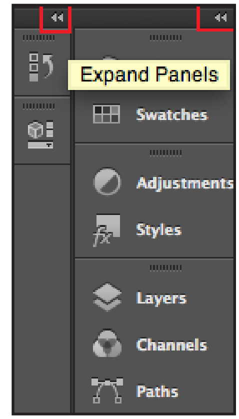
Each dock typically contains a column of **GROUPED** or clustered panels. In the **Essentials** workspace, for example, the **Color** panel, on top, is grouped with the **Swatches** panel on the right side of the **Application Frame**.

To view a different panel in the group, click its name tab at the top of the panel. All the panels are listed alphabetically under the **Window** menu. Check marks indicate those panels that are at the front of their panel groups, such as the **Adjustments**, **Colors**, and **Layers** panels in the **Essentials** workspace. The **Window** menu also lists keyboard shortcuts for the most commonly used panels, such as **F7** to open the **Layers** panel.

You have already seen how the **Workspace** menu lets you choose from premade workspaces. Now let's view and use the docks and individual panels.

When expanded, panels can be shrunk or expanded horizontally or vertically, but the dock itself always remains in position, either anchored to the edge of the screen or to its neighboring dock.

Dock Manipulation



The top of each dock has double arrows to collapse or expand all its panels.

- Click the right double arrows to collapse that dock, as shown here.
- If you want, you can shrink the width of the right dock in collapsed mode to hide the labels by dragging its left edge.

The **tab** key hides the panels and bars, but with a nice twist—they are spring loaded to reappear as you mouse over them:

- Press the **tab** key. Notice that all the panels including the **Tools** panel and the **Options** bar disappear, leaving more room to work on your document.
- Without pressing the mouse button, slowly move your pointer over the left edge of the screen or application window (Windows).

  When you are in the correct spot, the **Tools** panel will appear so that you can pick a tool. Now move right, away from the **Tools** panel, and watch the **Tools** panel hide again.
- Repeat these steps, moving the pointer to the opposite (right) side of the screen to reveal the panel docks, and then move left to hide them again.
- Press the **tab** key again to reveal all the panels and bars.

Shift + tab toggles to hide and reveal only the right panel docks, but not the **Options** bar or **Tools** panel. With the narrow one-column **Tools** panel, and the **Options** bar always visible, but the panels hidden, you can see the controls you use most often, keep most of the workspace available for document editing, and quickly reveal the panels when you need them.

Panel Controls

Individual panels can be grouped, rearranged, reduced to icons, floated, closed, and reopened.

Shrink and Expand



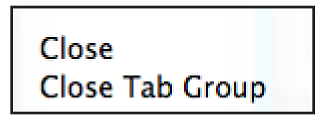
- If you click the tab of an expanded panel to activate it, pause briefly, and then click again, the entire group will shrink to just its top tabs, dramatically reducing its size.
- Repeat the process to expand the panel group.

Close and Reopen

In previous versions of Photoshop people were accidentally closing panels without meaning to, so in recent versions of Photoshop it has become a bit more complicated to close panels.



1. Each panel has a panel menu, accessed from the menu button in its upper right corner. (Alternately, you can right-click the tab).



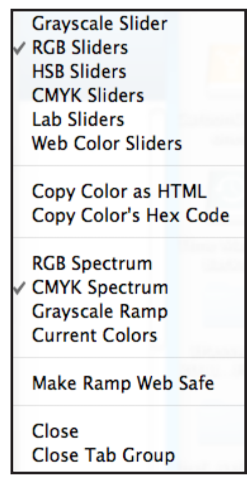
2. From the bottom of each panel menu, choose **Close** to close just that panel, or **Close Tab Group** to close all the grouped tabs, such as the **Colors** and **Styles** group.

Alternately, you can choose a checked panel from the **Window** menu to close it. This will close the entire tab group and not just the single panel.

To reopen a panel and its default group, choose its name from the **Window** menu.

TIP: When we lose panels, we find it is much more efficient to use the **Workspace Switcher** to restore our workspace defaults than to start manually opening panels or groups.

Panel Menus



Each panel has a menu of commands that pertain to that particular panel. Sometimes these commands are found elsewhere as well, and at other times they are restricted to the panel menu. Here is the **Color Panel** menu, which can modify the **Color** panel's appearance.

Panel Manipulation

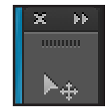
There are many ways to change the appearance and location of individual panels in the docks.

Free-float a Panel

Sometimes you want to move a panel out of its dock, to float freely on top of the document window. To do this, drag a named panel such as the **Layers** panel by its tab or use the dark area at the top of the **Tools** panel to float the entire panel group.



- Position the tip of the pointer in between the **Close Box** and the **Expand** arrows (it's a small space) and drag the **Tools** panel out of its dock on top of the document window.



- Drag it back when you are done. A vertical blue line may appear as you approach the correct location.
- Release the pointer button to drop the **Tools** panel in place.

Relocate a Panel Group

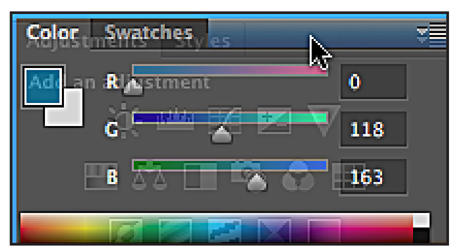


Panel groups, whether collapsed or expanded, have a gray region to the right of their tabs that can be used to move the entire panel group.

- Drag the **Adjustments/Styles** group by the bar to the left without releasing the mouse button. You will see a blue outline showing the outline of the panel.
- Without releasing the mouse button, drag the **Adjustments/Styles** group above the **Color/ Swatches** group. As you drag, the panels blur. When you approach the correct location, a horizontal blue line will appear at the top of the dock.



- Release the mouse button to insert the **Adjustments/Styles** panel into its new location.



- NOTE: if you see a blue box instead of a blue line, that is the location to merge the panels in your panel group with the underlying panel group.

Relocate an Individual Panel

If you don't like the group a panel has been placed into in one of the preset workspaces, you can drag any panel by its button (collapsed) or its tab (expanded) into a different group.

- Drag the **Styles** panel into the **Layers/Channels/Paths** group.
- If you don't like the new location, **Reset Essentials** from the **Workspace Switcher** menu to quickly

put the **Styles** panel back to its original position.

Document Navigation

The viewing size of a document appears in the both the **document tab** and the **Status** bar of the active document. Changing the viewing size, or **ZOOM LEVEL**, does not change the dimensions or print size of an image—it just changes its screen display.

Guided Exercise 1.2: Navigate a File with Menu Commands

In this guided exercise you will experiment with various menu commands to change your document view.

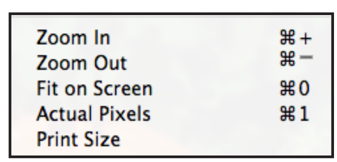
1. Open **01-pumpkin.jpg** if it is not already open.
2. Examine the document magnification in the **Status** bar.

   Large documents such as this one have too many pixels to show up in your monitor, so Photoshop hides some of the pixels so that you can "see" the entire image.

   Our document opened at **25%**. Depending on the size and setup of your monitor, your document may have a different percentage. **25%** means that the image is a quarter of its actual size in both height and width, and you are viewing a low-quality version of the actual document.
3. Choose **View > Zoom In**.

   Notice that the pumpkin gets larger, but you can no longer see the entire image within the document window. Scroll bars appear on the sides of the document window to let you view the hidden parts of the document. The view magnification also changes, probably to 33%, indicating the of the part of the image that is in the window.
4. Choose **View > Actual Pixels.** This command displays your document zoomed to **100%** .

   At **100%** magnification, you can see every pixel in the part of the document that shows in the document window; no pixels are hidden. But you cannot see the entire document because it is too large for the window.
5. Experiment with the other **View** menu commands shown here.



   Fit on Screen expands the document window to as large as can be shown on screen without being covered by panels.

   Print Size shows the image in the approximate size it will print. It is not very accurate.

Zoom In and **Zoom Out** let you increase and decrease magnification in set increments. If you prefer to work with keystrokes, you can zoom in and out by using the **command** key (Mac) or the **ctrl** key (Windows) along with the **plus** or **minus** keys. Each time you press the **plus** or **minus**, the zoom level increases or decreases accordingly.



Guided Exercise 1.3: Use the Zoom Tool with Options

1. Click the **Zoom Tool**, near the bottom of the **Tools** panel, to activate it. It looks like a magnifying glass.
2. Locate the **Options** bar, just below the **Menu** bar at the top of the Photoshop window.



   The far-left part of the **Options** bar always shows the **ACTIVE**, or currently-chosen, tool.

   To its right are two buttons that allow you to either **ZOOM IN** (**plus cursor**) or **ZOOM OUT** (**minus cursor**) when you use the **Zoom Tool**.

   Each time you click the **Zoom Tool** with the **plus cursor** chosen, it is the same as choosing **View > Zoom In**; the **minus cursor** is the same as **View > Zoom Out**.

3. Click the check box to the left of **Resize Windows to Fit**, and then zoom in and out several times. Notice what happens to your document window.
   - When **Resize Windows to Fit** is checked, the document window will expand or contract as you zoom in or out.
   - When **Resize Window to Fit** is not checked, the document window remains a constant size.
4. In turn, click the **Actual Pixels, Fit Screen, Fill Screen,** and **Print Size** buttons.
   They function the same as the commands on the **View** menu that you have already used.
5. Use the **Scrubby Zoom** option:
   a. With the **Zoom Tool** active, make sure that the **Scrubby Zoom** option is checked.
   b. Press and drag inside the document window to the right to zoom in, focusing on the location where you are dragging.
   c. Press and drag to the left to zoom out.
   d. Uncheck the **Scrubby Zoom** option and repeat step 5 b.

      When **Scrubby Zoom** is not checked, dragging makes a **SELECTION RECTANGLE**.

When you release the mouse, the region inside the selection rectangle zooms in dramatically.

e. Click **Fit Screen** to view the entire image in the document window.

6. Navigate with the **Hand Tool** which has the same four buttons as the **Zoom Tool**:

a. Choose the **Hand Tool**.



b. Click the **Actual Pixels** button to zoom in to **100%** or actual size.

c. Place the pointer into the center of the document and drag to one side. Notice that the document moves inside the document window, as if you were adjusting a large picture within a smaller picture frame.

d. Click the **Fit Screen** button before continuing on to the next guided exercise.

Guided Exercise 1.4: Use the Navigator Panel

Navigating a document with the hand tool, also called **PANNING**, can be much faster and more precise that using the document's horizontal and vertical scroll bars, especially for diagonal scrolling. The problem is that when only a small portion of the image is visible, it is hard to tell where you are so you can make effective edits.

The **Navigator** panel, hidden by default in the **Essentials** workspace, provides a convenient way to navigate within a document because it always displays a thumbnail of the whole image to help you orient. In this guided exercise, you will show the **Navigator** panel and use it.



1. Choose **Window > Navigator** to show the **Navigator** panel. It appears expanded, grouped with the **Histogram** panel. All three panel icons also appear, docked to the left edge of the original dock on the right side of the screen.

   The **Navigator** panel contains a small preview image, or THUMBNAIL, of the active document. In **Fit Screen** view, the entire thumbnail is surrounded by a red box, called the **PROXY**, that shows how much of the document is visible in the document window.

2. With the **Hand Tool** chosen, click the **Actual Pixels** button in the **Options** bar.

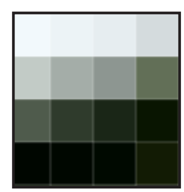
   The proxy shrinks to outline only a small part of the pumpkin image, that which is currently visible within the document window. The **Navigator** panel shows the zoom percentage of **100%** in its

lower left corner.

3. Drag the vertical scroll bar up so that you can see the top of the image. Notice that the **Navigator** panel's proxy moves as you drag.
4. Drag the horizontal scroll bar to the right so you can see the upper right corner of the image. Now the proxy should be in the upper right corner of the **Navigator** panel's preview.
5. Choose the **Hand Tool** and drag it around in the document.

   You can easily navigate diagonally with the **Hand Tool** and the **Navigator** panel's proxy updates your location in the document window.
6. Move the mouse pointer on top of the proxy in the **Navigator** panel. It changes to look like the **Hand** tool. **Drag** to change the proxy location on the Navigator thumbnail, which also changes the part of the document you see in the document window.
7. **Choose View > Zoom Out**.

   An image's view magnification is sometimes called its **ZOOM**. When you zoom out, you see a larger portion of the image in the document window, but Photoshop may need to hide some pixels
8. Click the **Zoom Out** button on the **Navigator** panel to make the zoom percentage decrease.
9. Click the **Zoom In** button on the **Navigator** panel to make the zoom percentage increase.
10. Drag the **Zoom Slider** all the way to the left. Notice that the document shrinks to **.17%** and it is highly pixilated and virtually invisible. Zooming out this far is not very useful.
11. Slowly drag the **Zoom Slider** all the way to the right. As you drag, the zoom increases slowly. Typically, you will drag the **Zoom Slider** slowly to dynamically find the zoom percentage you need for the task at hand.

    When you reach the right end of the **Zoom Slider**, you will have magnified the document to **3200%**. Now you can see the individual pixels that make up the document, but you see such a small part of the document that you may not be able to find the proxy in the **Navigator** thumbnail. Occasionally, you may use this view to edit individual pixels in a document.

Keyboard Shortcuts

KEYBOARD SHORTCUTS are quick ways to execute menu commands, and to change application

settings or options on the fly. Experienced Photoshop users learn keyboard shortcuts for commonly used commands to speed up their workflow.

Macintosh Laptop Users: Most modern computers use two button mice, but older Macintosh laptops still have only one button on their track pads. If you are using one of these laptops, you will need to press the **control** (or **ctrl**) key as you click to simulate the right click.

Navigation Shortcuts

Learning to navigate around an image and quickly change its view size is an important skill:

- Become familiar with zooming and scrolling around an image.
- Keep track of your document viewing magnification.

Practice these navigational shortcuts:

Double click the **Zoom Tool** to change document view to **Actual Pixels** or **100%**.

Double click the **Hand Tool** to change document view to **Fit on Screen**.

Press the **space** bar (the biggest key on the keyboard) to temporarily change from any other tool to the **Hand Tool**. Drag to pan your image. When you release the **space** bar, you will return to whatever tool you were using before you panned.

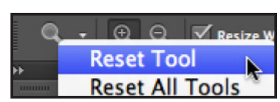
Look at the **Zoom Tool** cursor before you click it to see if it is set to **zoom in** (plus) or **zoom out** (minus). To temporarily reverse the zoom, **alt** + **click** (Windows) or **option** + **click** (Mac).

If a tool other than the **Zoom Tool** is active, use **Command/Ctrl + Plus** to zoom in or **Command/Ctrl + Minus** to zoom out.

Context Menus

If you **right-click** (two button mouse) or **ctrl +click** (Mac laptop trackpad) on a part of your document or workspace, its **CONTEXT MENU** of relevant commands will appear.

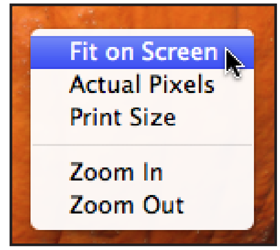
Restore Tool Defaults



To set an individual tool's settings back to the defaults, **right-click** the tool icon in the upper left corner of the **Options** bar and choose **Reset Tool** from the context menu that appears.

To restore all tools to their default settings, right-click the icon of the chosen tool in the **Options** bar and choose **Reset All Tools** from the context menu that appears.

Zoom with Context Menu



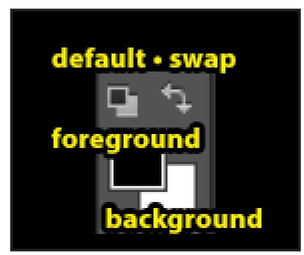
You can also access context-sensitive menus of commands relevant to the current tool. If you choose the **Zoom Tool** and then either **right-click** (two button mouse) or **ctrl + click** (one button mouse) on a part of your document or workspace, its **CONTEXT MENU** of relevant commands will appear. The **Hand Tool** provides only the top three options.

Your First Photoshop Project

A common problem with learning any new application is that, in the beginning, you look at a lot of "stuff" but don't get to do anything fun. Since Photoshop is so much fun, we don't want you to miss out. Here we will guide you through some exercises that let you have fun with Photoshop while you receive a very basic introduction to Photoshop painting and layer manipulation. Your goal is to experience just a little of what Photoshop can do, not to provide comprehensive coverage of each step you accomplish. As the course proceeds, we will return to each of these topics in more detail.

Guided Exercise 1.5: Begin to "Carve" a Pumpkin, Photoshop Style

1. Open **01-pumpkin.jpg** image if necessary.
2. **Locate the Color Controls** near the bottom of the **Tools** panel. They are the solid colored squares shown here.



Many Photoshop tools use one or both of two user-defined colors, **Foreground** and **Background**. The big top left square shows the **FOREGROUND COLOR**; the big bottom right square shows the **BACKGROUND COLOR**.

What is the difference between the **Foreground** color and the **Background** color?

- Painting tools such as the **Brush Tool** and the **Pencil Tool** paint in the **Foreground** color.
- The **Eraser Tool** reveals the **Background** color when painting on the **Background** layer, the starting point for most Photoshop images The **Foreground** and **Background** colors are used together to make gradient fills, and for other special effects.
- The **swap** button which looks like a double arrow switches the **Foreground** and **Background** colors. If we clicked it with the default colors chosen, the **Foreground** color would become white and the **Background** color black.

- By default, the **Background** color is white and the **Foreground** color is black. In a moment you will choose or **SAMPLE** a new **Foreground** color. Clicking the **default** button would then restore the black and white default colors.

3. Click the **Swatches** panel tab to bring it forward.

   By default, the **Swatches** panel hides beneath the **Color** panel. Each box is a single-color **SWATCH**.



4. Without pressing its button, move the mouse over the green swatch near the upper left corner of the **Swatches** panel.

   The (mouse) pointer becomes a tiny eyedropper to signify that you can choose or sample that color, and a tool tip appears to tell you the color. Here we are sampling **RGB Green**.



5. Click that green swatch to make it the **Foreground** color.
   Note the change in the **Color Controls** on the **Tools** panel.

6. Restore all tools to their default settings:

   a. **Right-click** the tool icon in the upper left corner of the **Options** bar.

   b. Choose **Reset All** from the context menu that appears.

   c. Click **OK** from the dialog box that appears.

7. Paint a nose on the pumpkin.



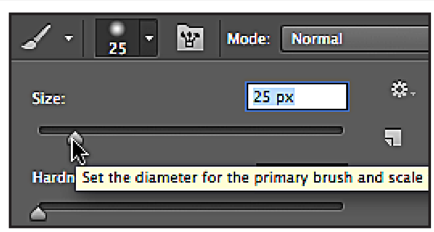
   a. Choose the **Brush Tool** and drag it in the center of the pumpkin to paint a short green line. Whoops! It's too thin.



   b. Choose **Edit > Undo Brush Tool** to remove the green line.



   NOTE: Whenever you **Undo** in Photoshop, the **Undo** command includes the name of the last tool or command you used.



   c. In the **Options** bar, click the **Brush thumbnail** to display the **Brush Preset** picker.

   d. Drag the **Size** slider to the right, to increase the default **13 px** to **25 px**.

   e. Drag the **Brush Tool** to paint a short green line in the center of the pumpkin.

That's a better thickness.



f. Paint two more lines to make a triangle.
It could be the nose of a jack-o'-lantern, but it is too big.

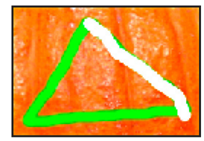
8. Attempt to erase the nose:

a. Click the **Eraser Tool** and examine its **Options** bar.



The **Eraser Tool**'s default settings are similar to the **Brush Tool**'s settings.
An additional option, **Erase to History**, will not be covered in this course.

b. Reapply steps 7c–d to change the **Eraser Tool** brush tip size to **25 px**.



c. Drag the **Eraser Tool** across one of the green lines to erase it. Whoops, more problems:

There are still traces of green on the edges of the white. More erasing could correct that problem, but, the line will still be white, not the pumpkin image you probably expected.

Look at the **Layers** panel and note that the pumpkin has one layer, named **Background**. When you paint directly on the Background and then use the **Eraser Tool** , you erase to the **Background** color (white by default) rather than restoring the original image.

9. Keep the pumpkin image open while you next read about the **History** panel, and then use the **History** panel to remove the green triangle to restore the original pumpkin.

The History Panel

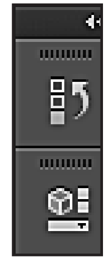
When you need to undo just one step in Photoshop, you can choose **Edit > Undo** as we did earlier. Typically, however, if you discover a problem further down the road, like the wrong size nose on the pumpkin, **Undo *only reverses the very last command or tool you used***.

When this happens, the Photoshop **History** panel comes to the rescue.

Every time you use a tool or command to edit your image, the **History** panel adds that particular version of the image to the bottom of the panel as a **HISTORY STATE**. The History panel lets you choose any one of these recent states to restore the image to the desired state. The **History** panel records only document-specific steps that change selections, pixels, or paths—not program-wide

alterations such as a preference change or a change in document view. Program-wide alterations are not changes to the components of a particular image and so are not added to the **History** panel.

WARNING: The **History** panel is wonderful, but it has one major limitation:
History states are not saved with the image. When you close an image, its History states vanish.



Guided Exercise 1.6: Use the History Panel to Undo Image Changes

The **History** panel is invaluable for Photoshop work because it lets you go back up to 20 steps (by default) to recover from unwanted image edits. Try it.

1. Locate the **History** panel. In the **Essentials** workspace, it is minimized to a button, to the left of the **Colors/Swatches** group, just above the **Properties** button.

2. Click the **History** panel button to expand it.

   Towards the top of the **History** panel is a small thumbnail of the pumpkin image, with the **History states** listed beneath it. If the scroll bar on the right side of the panel is visible, it indicates that there are more states than you can see in the panel.

3. Drag the lower edge of the panel down to make it longer and to reveal all its **History states**, if needed.

   Here you can see seven **History states**. The default name Photoshop gives to each state is limited to the icon and the name of the tool used.

   - **Snapshot**: The appearance of the document when first opened. This state shows the document thumbnail and its file name.
   - **Open**: Opening the original document.
   - **Brush Tool**: Painting the first green line.
   - **Brush Tool**: Painting the second green line.
   - **Brush Tool**: Painting the third green line.
   - **Eraser (Tool)**: Erasing part of a white line.
   - **Eraser (Tool)**: Erasing more of the white line.
   - **Eraser (Tool)**: Erasing still more of the white line. This state is highlighted to indicate that it is the state shown in the document window.

4. Click the **Brush Tool** state immediately above the top **Eraser** state.

   When you click on a state, that activates it, and reveals the image in that state in the document window. The white eraser mark is now gone.

5. Click the **Open** state. Now the image returns to its original state before you painted on it.

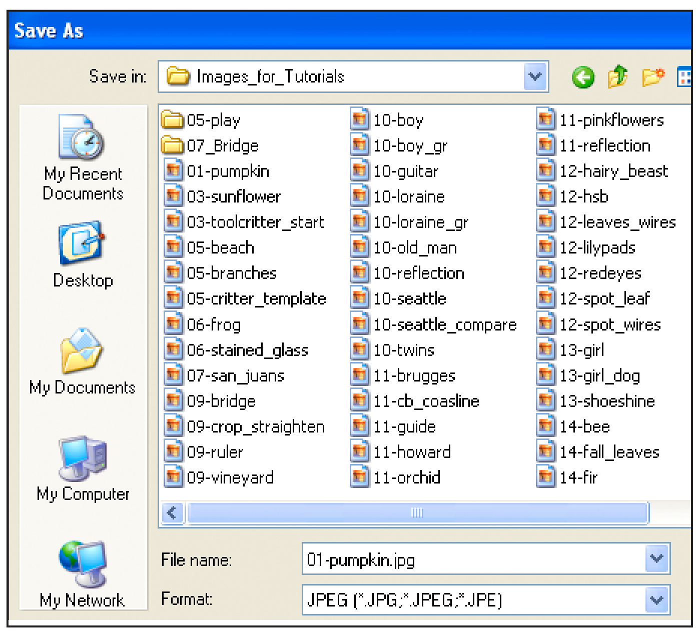
6. Click the first **Eraser** state. The green triangle and white eraser line return.

7. Click the image thumbnail at the top of the **History** panel. Again the image returns to its original state before painting.

   The image thumbnail is called a **SNAPSHOT**. Each snapshot is a temporarily-stored **History state**. Right now, the **01-pumpkin.jpg** and **Open** states are identical. That's because Photoshop automatically makes that first snapshot for you in case you need to get back to the original image.

   By default the **History** panel can only record up to twenty states. When you make the twenty-first change to a document, the first state (**Open**) vanishes from the top of the list to make room for the most recent change at the bottom.

   WARNING: Snapshots only remain with the document until you close the document window, or quit Photoshop. Don't expect to see them if you close your image and then reopen it.



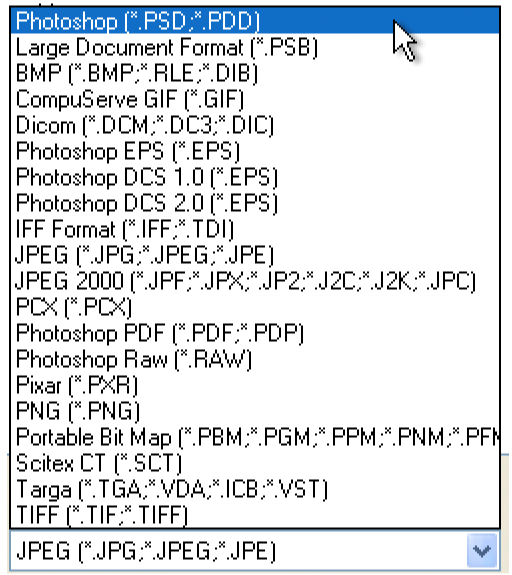
8. Save a working copy of **01-pumpkin.jpg** in Photoshop (**PSD**) format to preserve the original and to give you more editing options. We used Windows screen shots here, but the steps are the same for Mac OS.

   a. **Choose File > Save As** to reveal the **Save As** dialog box.

   b. Set the location for the new version of the file. You can save it to a flash drive if working in a computer lab, or to the hard drive on your own computer.

   c. Change the format from **.jpg** to **.psd**:

Click the arrow to the right of the **Format** box, and choose **Photoshop** from the top of the drop down list.



The **JPEG** format was used for fast downloading. **PSD** files are optimized for Photoshop work, and permit some important features, such as saving layered documents, that JPEGs cannot do.

d. Change the filename to **pumpkin1**. Do not type the period or three character extension. Photoshop will change it for you, adding the proper extension for whatever format you designated in the format box, **.psd** here.

e. Click **Save** to save the document as **pumpkin1.psd.**

9. Choose **File > Close** to close the **pumpkin1.psd** image.

10. Choose **File > Open Recent** and choose **pumpkin1.psd** from the list of recently opened files.

    In some computer labs, you will need to choose **File > Open** and navigate to your saved file.

11. Examine the **History** panel.

    Note that the **History** panel now only displays the image snapshot and the **Open** history state. The other history states are gone—permanently. History states are stored in RAM, and not saved to disk with a document. When you close a document, if the computer freezes, or if you have a power failure, you lose your history states. For this reason, you should save your document frequently as you work on it. Each time you choose **File > Save** (**Command + S** on Mac, **Ctrl + S** on Windows), your current document state is stored on disk, and replaces the previously-saved version.

History Panel Keyboard Shortcuts

Edit > Undo (**Ctrl + Z** or **Command + Z**) reverses the last change or history state that you made to the image. It cannot reverse more than one history state.

Edit > Redo (**Ctrl + Z** or **Command + Z**) is available just after an **Undo**. It restores the image to the way it was before the Undo.

Edit > Step Backward (**Ctrl + Alt + Z** or **Command + Option + Z**) steps you back one history state each time it is used.

Edit > Step Forward (**Ctrl + Shift + Z** or **Command + Shift + Z**) steps you forward one history state at a time. It is available if you just stepped backward.

The Layered Photoshop Document

You have already experienced the lack of editing flexibility that occurred when you tried to paint directly on top of the pumpkin pixels. Layers greatly simplify your image editing and provide some amazing special effects.

LAYERS isolate distinct parts of your image so that they can be individually viewed, positioned, or edited. Think of layers as a stack of clear plastic sheets containing image pixels and transparent areas. In the transparent areas you can see below to the layers underneath; where there is opaque imagery, you cannot.

The **Layers** panel shows the hierarchical organization of a document and lets you control the ways in which layers interact.

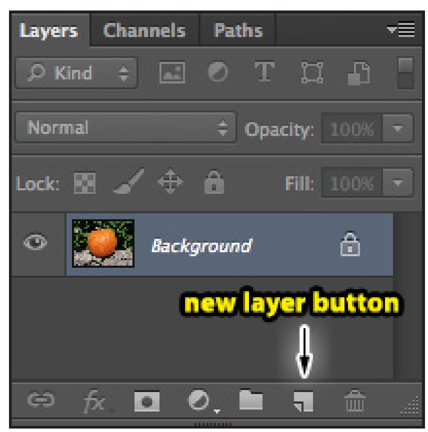
Guided Exercise 1.7: Use Layers to Finish "Carving" the Pumpkin

1. Open **pumpkin1.psd** image if necessary.

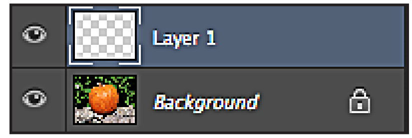
2. In Guided Exercise 1.6 you expanded the **History** panel on top of the **Layers** panel. Reset the **Essentials** workspace to return your panels to their default locations so that you can see the entire **Layers** panel in the bottom group of Photoshop panes. If the **Layers** panel is collapsed, click its name tab to expand it.

   This document has one layer, named **Background**. This layer shows a thumbnail of its contents. Whenever you open an image that was taken with a digital camera, it opens as the **Background** layer.

   The **Layers** panel has buttons along its bottom. Second from the right is the **New Layer** button. Click it to create a new, transparent layer named by default **Layer 1**. The new layer appears above the **Background**.

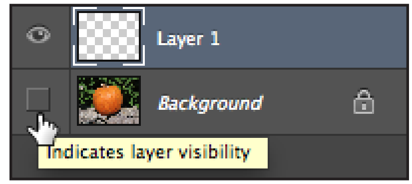


3. Compare **Layer 1** with the **Background**.



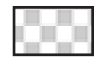
4. Notice that **Layer 1** is highlighted (dark blue here) and there is a decorative box around its thumbnail.

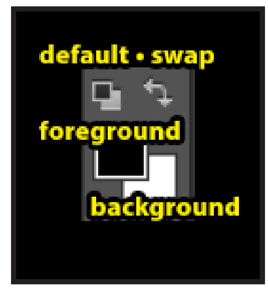
   The highlight and the box are the two ways that Photoshop indicates in the **Layers** panel that **Layer 1** is the **ACTIVE LAYER**, the one that you can paint on. Each document can have only one active layer at a time.



5. Click the **eye** symbol to the left of the **Background** thumbnail. This turns off the visibility of the **Background** so you can see **Layer 1** all by itself. When a layer is not visible, or **HIDDEN**, its eye changes to a dark square.

   Now all you see is a gray checkerboard. When you view a layer other than the **Background** by itself, Photoshop represents transparent regions with this checkerboard pattern. Notice that the checkerboard is also shown in **Layer 1**'s layer thumbnail.

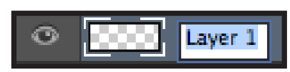




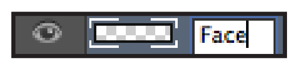
6. Click the **Background** eye again to make both layers visible.
7. Click the **Default** button in the color picker to restore the default colors—black for the **Foreground** color and white for the **Background** color.
8. Give **Layer 1** a more descriptive name.

   TIP: it is essential to give layers meaningful names because complex Photoshop documents can have thousands of layers.

   a. Double-click the name **Layer 1** in the **Layers** panel to highlight its name.

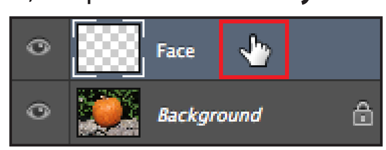


   b. Type the word "**Face**" and press the **enter** or **return** key to change the default name, **Layer 1**, to a more descriptive name.



   Notice that you did not need to delete the **Layer 1** placeholder name because the label highlighted when you double-clicked it. As soon as you typed the **F**, it replaced the text **Layer 1**.

9. Paint your pumpkin's face on the **Face** layer.



   a. Check one more time to be sure the **Face** layer is active (highlighted). If it isn't, click to the right of its name to activate it.

   b. Choose the **Brush Tool**, and paint a black face on the **Face** layer.

   As you paint, make the brush tip bigger or smaller to suit your needs. Heavier, thicker lines will make your pumpkin look more carved once you finish the guided exercise.



You might get an idea from the jack-o'-lanterns shown here. This image is from http://www.gettyimages.com.

c. If you mess up, you can either go back in **History**, or choose the **Eraser Tool** and erase what you don't like. On any layer but the **Background** layer, the **Eraser Tool** erases to transparent, not to the **Background** color.

d. When you finish painting your face, choose **File > Save** to update the document to include the **Face** layer.



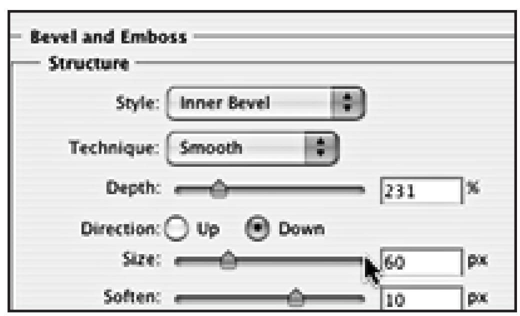
e. Now look at the **History** panel. You should see many states that say **Brush Tool** or **Eraser**, but no **Save** state. That is because the **History** panel only records document alterations, and saving does not alter the image pixels you see on screen.

10. Use the **Layers** panel settings to make your painted face look like it is carved into the pumpkin.

Here you will just follow along step by step, but later in the course you will learn how to customize layer settings to achieve many special effects.

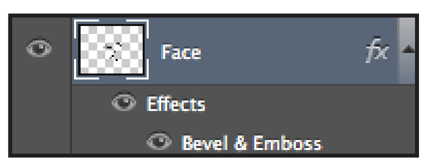
a. With the Face layer active, choose **Layer > Layer Style > Bevel and Emboss** to open the **Layer Style dialog box.** This dialog box is so huge that you may need to drag it by its **Title** bar so that only the left side shows, and you can still see some of your painted face.

b. In the **Structure** area of the **Layer Style** dialog box, change the settings to match the ones listed here.



Style: Inner Bevel
Technique: Smooth
Depth: 231%
Direction: Down
Size: 60
Soften: 10

11. Click **OK** to apply this layer style to the **Face** layer.



The **Face** layer now has a subarea named **Effects** and a further indent listing the name of the effect that was applied.

The pumpkin looks more interesting than with the flat black paint, but it still does not look carved. Why **Effects**? Because in Adobe terminology a **Layer Style** consists of one or more individual **Effects**.

12. Use the **Fill** setting in the **Layers** panel to make the face look like it is carved into the pumpkin:



   a. Locate the **Fill** setting above the top layer of the **Layers** panel and its drop down triangle to the right of the word **Fill**.

   b. Press the triangle to reveal a slider where you can set the amount of **Fill**, from **0%** to **100%**.

   c. Drag the slider all the way to the left, until it reaches **0%**. Notice what happens—the **Bevel & Emboss** effect stays completely visible, but the black face paint fades away making the pumpkin look carved.



   d. Drag the slider a little to the right to keep just a bit of the black, if you prefer.

   This pumpkin's face is faded to **16%**.

13. Choose **File > Save** to save your work. Print if desired, following the instructions in the next tutorial.

Photoshop Help

Photoshop is a tremendously complex application, and it is difficult even for Photoshop "experts" to remember all the details. Fortunately, help is only a menu away. Let's look at some of the available resources:

Guided Exercise 1.8: Use Photoshop Help

This guided exercise will give a brief introduction to using Adobe's online help system. This site is constantly changing so what you see may differ from what we demonstrate here.

Help is online using **Adobe Air**. You may need to install **Adobe Air** the first time you seek help. If so, it will happen automatically.

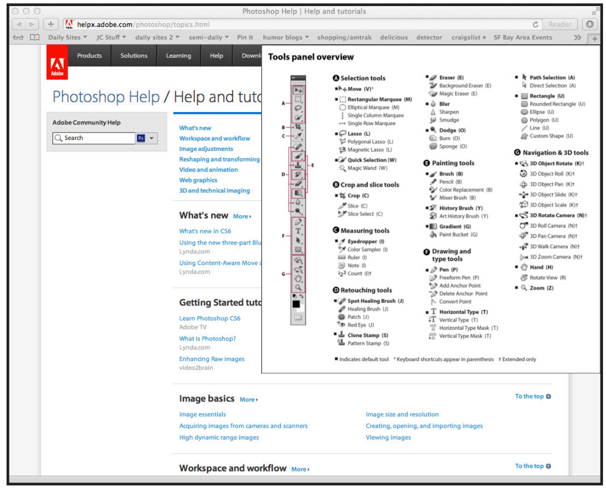
By distributing Help online, Adobe can keep improving application support, and add to Help files to keep them current. Adobe Air supports rich media, so videos can be integrated into the Help system.

1. Choose **Help > Photoshop Online Help**.

This launches your Web browser, if needed, and takes you to the Photoshop Help starting page.

At the top of the page is a list of categories such as **What's New**, **Image Basics**, and **Repair and Restoration**. When you click on one of the categories, the page jumps to the appropriate section.

2. Click **CS6 Help PDF (20 MB)** in the What's New section to see a saveable, printable version of **Photoshop Help**. It is a big file (759 pages) so it takes a while to appear.



3. Try out **Photoshop Help Online**:

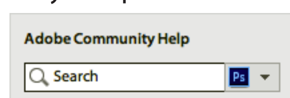
   a. Click on the **Workspace and Workflow** category at the top of the page.

   b. Click on the **Tools** link. This takes you to a page that includes a very useful panel overview, showing how the tools are grouped by function with the names and keyboard shortcuts for each tool.

   c. Scroll down the page to see the **Tool Galleries** with full-color examples of how each tool works.

4. Search to find more information about a specific topic:

   Sometimes you don't know where to find what you are looking for, or don't want to waste time drilling down the content topics. In either case, you can type a word or two of your question or topic into the search box at the top left side of the **Adobe Help** pages.



   a. Type **zoom** into the **Search** box and press **enter** or **return**.

      You will see articles on your topic underneath the search box. The articles may reference various versions of Photoshop, not just CS6.

   b. Experiment with different search topics.

5. When you are done, you can either close the **Help** browser window or minimize it for quick reference as you continue to work.

On Your Own

Navigation Shortcuts

Photoshop requires a lot of zooming in and out.

Practice to become an efficient navigator:

- Show the **Navigator** panel and practice using it to navigate.
- Open your completed **pumpkin1.psd** and practice these navigational shortcuts with the pointer (mouse) and the keyboard until they become second nature.

TASK	POINTER (MOUSE)	KEYBOARD
Actual Pixels or 100%	Double click the **Zoom** Tool	**Command/Ctrl + 1**
Fit on Screen	Double click the **Hand** Tool	**Command/Ctrl + 0**
Drag to pan your image	Press the **space** bar and drag	
Zoom in without the **Zoom** Tool		**Command/Ctrl + plus sign** (+)
Zoom out without the **Zoom** Tool		**Command/Ctrl + minus sign** (-)

Resources

Richard Harrington has a fine video on Workspaces: http://tinyurl.com/7jxghy2
It demonstrates what we cover in this tutorial, and then shows some customization we did not cover.

Adobe posts many free videos on Adobe TV: http://tv.adobe.com/product/photoshop/

Practical Photoshop CS6, Level 1
Tutorial 2: Files for Print and Web

In this tutorial you will take a first look at preparing files to be printed, emailed for screen viewing, or displayed on the World Wide Web.

Objectives

- Differentiate among monitor, document, and printer resolutions, and understand when to use each measurement.
- Distinguish between appropriate resolution for print and for Web or email images.
- Print a Photoshop document by configuring the **Print** dialog box.
- Use the **Save for Web** command to make a copy of the print-quality document for fast online transmission.

Resolution

Resolution is a difficult concept to grasp. In nearly every class we teach, at every level, we get questions about resolution. Part of the problem is that the word **RESOLUTION** is used to measure different things. And, to make it worse, each item being measured has two kinds of measurements: a quality measurement and a quantity measurement. When measuring the **QUALITY** of an image, resolution specifies the number of pixels within a given area, (often given in pixels per inch or dots per inch) But resolution can also refer to the total **QUANTITY** of pixels in something—its absolute image dimensions.

Monitor Resolution

Let's begin with what we see on screen or **MONITOR RESOLUTION**. Monitors display patterns of colored pixels. Measured by quality, these displays are measured in **PIXELS PER INCH** or **PPI**. Monitor resolution can also refer to the physical properties of a monitor—how many total pixels it can display—its quantity. Monitor resolution determines how much of a Photoshop document can be seen when viewed at actual size (**100%**). Modern, adjustable monitors have adjustable resolution.

Some monitor numbers to keep in mind:

- The smallest computer monitor is typically **640 pixels** wide and **480 pixels high** (**640 x 480**), a quantity measurement. Handheld devices have even smaller resolution; the original iPhones had a screen resolution of **320 x 480**.
- Photoshop CS6 requires a screen resolution of at least **1024 x 768 pixels**.

Document Resolution

DOCUMENT RESOLUTION is the absolute measurement of a document in pixels, with width being the first number and height the second. Thus a document that is **600 x 400** is **600 pixels** wide and **400 pixels** tall. This is the "quantity" form of resolution.

Each Photoshop document also has a resolution measurement in **PIXELS PER INCH**, or **PPI** (**ppi**)**.** This is the "quality" form of resolution. Web pages and multimedia projects typically use 72-96 ppi images both to keep file sizes down and to display properly on small or low-resolution monitors that display from 72 to 96 pixels in each square inch of the computer monitor.

Printer Resolution

PRINTER RESOLUTION describes how a document is set up for printing. Printers apply dots of ink or toner onto paper or other media. Printed images are measured in **DOTS PER INCH** or **DPI** (**dpi**).

Modern desktop printers, laser or ink jet, typically print somewhere in the range from 300 to 2400 dpi.

Printed documents use resolutions of 100 ppi and up. A 4 inch by 5 inch document with an image resolution of 100 ppi will have pixel dimensions of 400 x 500 pixels, while a 4 inch by 5 inch document with an image resolution of 300 ppi will have pixel dimensions of 1200 x 1500 pixels. The small number of pixels in Web graphics make them load quickly—ideal for screen work. However, these low resolution images print poorly because they don't have enough pixels to provide the optimal number of dots for each inch of printed document.

The smaller the print dots, the higher the printer resolution setting. For instance, an image with a dpi of 150 will have smaller dots than an image set to 72 dpi. The higher the resolution, the higher quality the printout will be, up to the printer's physical capabilities. When an image is printed, each image pixel is represented with a dot of ink or toner. When an image is printed with enough dots, the human eye perceives discrete color changes as continuous, and the digital image looks like an analog photograph. Your brain blends the colors.

What can be very confusing is that an image with a low resolution can look good on the screen if not zoomed in too close. You could work away on an image believing that you have a high quality image. Then, when you print it out, you are very disappointed because the large size of the printed dots makes the image look blocky or pixilated. The bottom line is that it takes a much higher resolution for an image to look good in print than it does on screen.

Setting up Documents for Print

Before you can set up a document for printing, you need to know the resolution of the printer you are using, known as your **OUTPUT PRINTER**. The best way to do that is to read the fine print on the manual that came with your printer, but that is not always easy to do. The Internet is also a good source for finding out more information about your printer. But, just in case you lost your manual or are printing in a computer lab, here are some guidelines:

- If a printer lists two resolutions, such as this description for an HP Officejet Pro K5400 Color Printer: "Up to 1200 x 1200 dpi or up to 4800 x 1200 optimized dpi color" you should use the lower number to calculate your image resolution.
- Color laser printers are usually 600 dpi printers.
- Older color ink jet printers are 720 dpi printers; newer photo ink jet printers are at least 1200 dpi printers.
- Graphics applications such as Photoshop measure files in **pixels per inch (ppi)**, and the printer converts the **ppi** into **dots per inch** (**dpi)** when it prints the document.

Beginning graphics students tend to assume that if you have a 600 dpi printer, you should have at least one pixel in your image for every one of those dots. As we shall see, this is often not correct.

If you print an image that has only black and white pixels, and no shades of gray, your resolution should match that of the printer. In this case, the printer places only solid black dots onto the printout. But, if you print a photograph or graphic, either in color or in shades of gray, the **PRINTER DRIVER**, the software that tells the printer how to work, performs its own special magic called **interpolation** to fill in transitional colors between each document pixel. For this reason, these documents only need **ONE THIRD** the ppi of the output printer for high-quality results. If your document has a higher resolution than your printer needs, the document will take longer to print; it will be a larger file that will take longer to edit, but its quality will not be any better. So, what resolution should you choose?

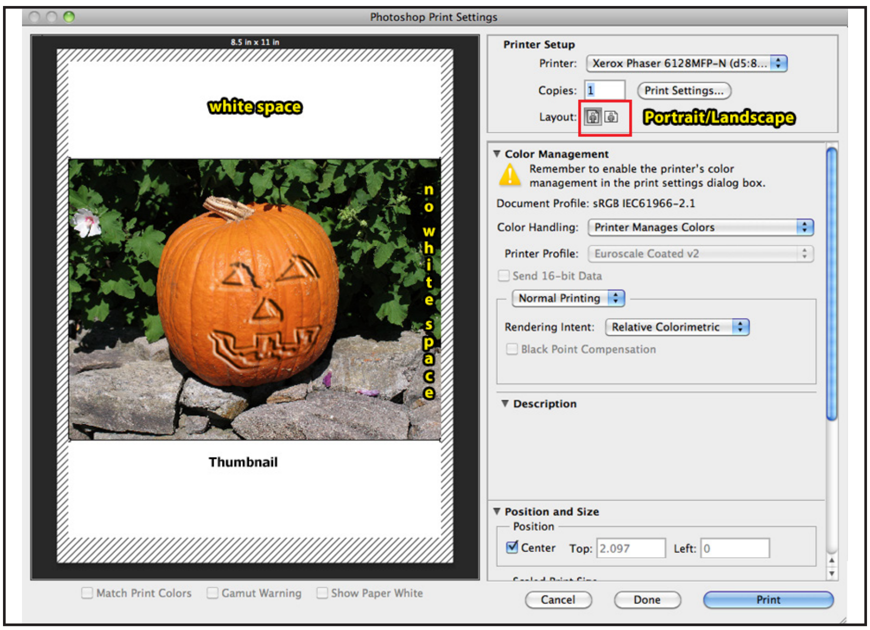
This simple chart, with file sizes based on a document that is 4 x 6 inches, shows the relationship between resolution and file size, and gives some recommended printer-based resolutions.

PRINTER	BLACK DOTS ONLY	COLOR AND/OR GRAYSCALE DOTS
Color laser	600 ppi	200 ppi
File size	1.03 M	2.75 M
Older color ink jet	720 ppi	240 ppi
File size	1.48 M	3.96 M
Photo ink jet	1200 ppi	300 ppi
File size	4.12 M	6.18 M

Technically, following the "rule of one-third," you should print your photo ink jet printouts at 400 dpi. However, since the human eye cannot see such small color transitions, in most cases your 400 ppi printout will not look better than a 300 ppi printout, but your file will be much larger. For color and grayscale, think **one third**; for pure black and white think **one to one**.

Printing Photoshop Documents

When you first choose **File > Print,** you will see a huge dialog box with a thumbnail of your image on the left side, and a number of controls on the right.



The portion of the image that will print is called the **THUMBNAIL**. Some folks are questioning whether it really is a "thumbnail" since it is so large. Adobe calls it a thumbnail because it is smaller than the actual printed document.

The left side, or **PREVIEW AREA**, shows a thumbnail of how your image will print relative to a piece of paper. The largest gray box represents the full page of paper as set in the **Page Setup** dialog box (usually US Letter) and the smaller white box represents the printable area for your printer.

Printers need to grab the paper to pull it through the printing mechanism. This usually is a small amount on the top and sides, and a larger amount on the bottom of the paper. These areas, called **MARGINS**, typically will not print. The portion of the paper that can be printed is called the **PRINTABLE AREA**. If you don't see any of the white box, this usually means that your image is too large to be printed on this paper.

File > Print displays Photoshop's **Print** dialog box that you will use in the next guided exercise. Its **Print Settings** button can be used to view and change printer-specific settings such as print quality, paper type, and number of copies. After configuring your **Print Settings**, click **Save** to save the printer settings and return to Photoshop's **Print** dialog box.

File > Print One Copy doesn't bring up any dialog box at all— it just prints a copy of your image using the settings you used last time you printed an image.

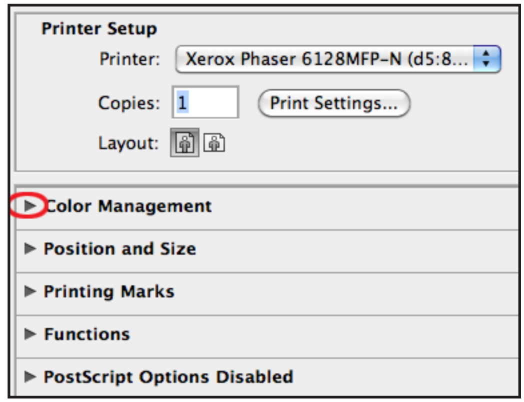
Ink Jet Paper Quality and Image Longevity

As you learn Photoshop, you will probably print your work on an ink jet printer. Ink jet paper choice has a tremendous effect both on the quality of your original output and its longevity. Ink jet prints are sharper and brighter when printed on specially-made ink jet photo paper than on junk copy paper. These specialty papers have a large amount of clay in them, and the clay keeps the print dots on top of the paper, so that those bright, crisp dots you worked so hard to create don't get absorbed into the paper and become dull and blurry. Often, you may not need a new printer, but simply better paper.

Unless they are printed on special, long-lasting or **ARCHIVAL PAPER**, and stored away from light, moisture, heat, and ozone—your digital printouts will not last very long. Someone we know printed some photographs of her new granddaughter using Epson Photo paper, and put them on her refrigerator, which does not receive any direct sunlight. Six weeks later, the photos were badly faded. By reading the following article on print permanence, she learned that if she had protected the photos behind glass, they would have lasted a lot longer:
http://www.shutterbug.net/pointofview/0705point/index.html.

Guided Exercise 2.1: Print Your Pumpkin

In this guided exercise, you will use Photoshop's **Print** dialog box to set up your carved pumpkin document for high quality printing, and then print it. Over the years Adobe has added more and more individual settings to the **Print** dialog box, which is helpful for print professionals but can be very confusing for Photoshop beginners. In this guided exercise you will only be using the most basic print settings.



1. Open the **pumpkin1.psd** image if necessary.

2. Choose **File > Print** to open the **Print** dialog box.

   Notice that the **Print** dialog box has two panes: the left pane shows the preview of how the image will print and the right side gives a long list of settings, each of which has been expanded.

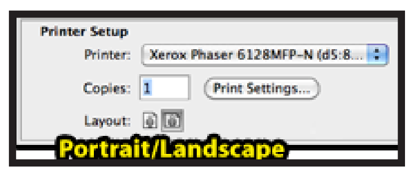
3. To simplify the **Print** dialog box, click the triangle to the left of each setting category underneath **Printer Setup** to collapse the five settings categories beneath it.



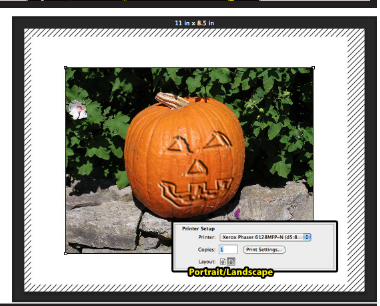
4. Configure your printer in the **Printer Setup** settings.

   a. The **Printer** drop-down menu has a list of all the printers connected to or available to your computer. Begin by choosing your desired printer from the **Printer** drop-down menu at the top of the dialog box.

   b. Look at the thumbnail. Notice that the document is too big for the paper. You can see white space on the top and bottom, but not on the sides of the thumbnail.



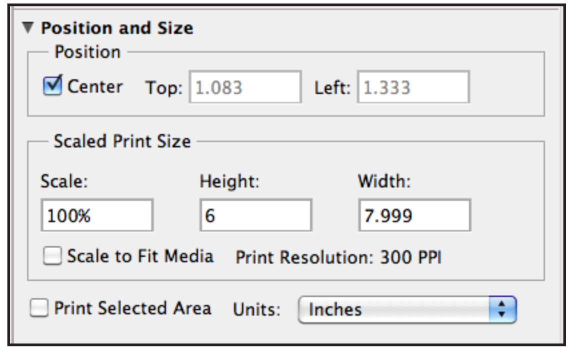
5. Click the **Landscape** orientation button in the **Layout** section of **Printer Setup** to change the default **Portrait** (or tall), to **Landscape** (or wide).



6. The document now has white space all around the thumbnail.

   Do not change any other settings in the **Print** dialog box unless you know how to use them. These settings are for more advanced users.)

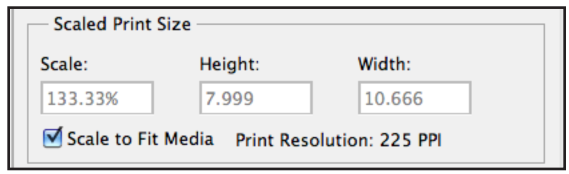
7. Click **Print** to print the document.



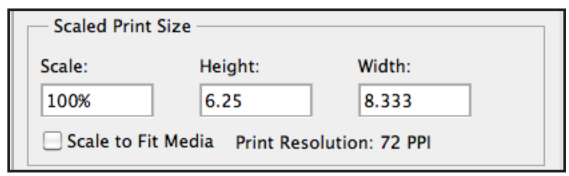
Beware of Scale to Fit Media

In the center of the **Print** dialog box, you will find a section called **Position and Size**. Towards the bottom of the section, the **Print Resolution** for your image is specified. For **pumpkin1.psd**, your resolution should be **300 ppi** which is optimal for most modern printers. (We set it up that way when we created the tutorial.)

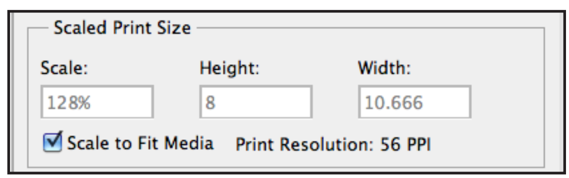
The **Height** of the printed image will be 6 inches and the **Width** almost 8 inches. Thus when printed, the image will not cover the entire 8.5 x 11 inch page or even its printable area.



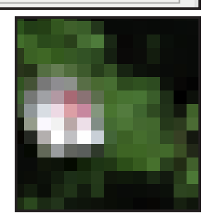
If you click the **Scale to Fit Media** check box, the image enlarges proportionately to cover the printable area of your paper, approximately 8 x 10 inches. But, to enlarge the document, Photoshop lowers the print resolution from **300 ppi** to **225 ppi**, thereby slightly reducing the quality of the printout. As the preview shows you, this image will still print pretty clearly (but not quite as well as if there were **300 ppi**).



In the next section of the tutorial, you will resize a copy of the pumpkin image for fast Web transmission. Because this low-resolution copy is only **72 ppi** and it will not have enough pixels to make a high-quality printout of the same size as the original. At **300 ppi**, it will only print at about 1 1/2 by 2 inches.



Moreover, if you click **Scale to Fit Media**, although the printout will be approximately 8 x 10 inches, its print resolution will only be **56 ppi**.



The **Print** dialog box warns you by showing a very blocky or **PIXILATED** preview. That means your printout will be of very low quality.

The take home message? Use high quality images for print, and make low-quality smaller images for Web and email since smaller images transmit much more quickly online.

Saving a File for Fast Online Transmission

Assuming that you are a Photoshop beginner, we pre-configured the pumpkin image for you so that it would print properly on an ink jet or color laser printer. This image has 300 pixels per each inch of the printed image; the image is 2400 pixels wide and 1800 pixels high. Saved to disk, it started out as a jpg file at slightly less than 1 MB. When you opened it in Photoshop and changed it to PSD format, it expanded to 12.2 MB, and once the face layer was added, it became 24.7 MB. That is a BIG file.

When you send a file over the Internet, either attached to an email message or uploaded to a Web page, big files can cause three kinds of problems.

1. Big files take a long time for you to send (upload) and for the recipient to receive (download).

   If you send someone a 24 mb file, it might take twenty minutes for them to receive it if they use a modem to connect to the Internet (dialup connection) and maybe twice as long for you to send the file with a dialup modem.

2. Big files can cause problems with Internet Service Providers.

   Each Internet Service Provider typically gives each client a small amount of space, often 2-10 MB, to store all your downloaded files. If someone sends you a 24 MB file, or a bunch of people send you 1 MB files, you can quickly run out of room, and your provider may stop serving you. If students send their instructor large files, that instructor's email capabilities may be turned off until the inappropriately big files are deleted.

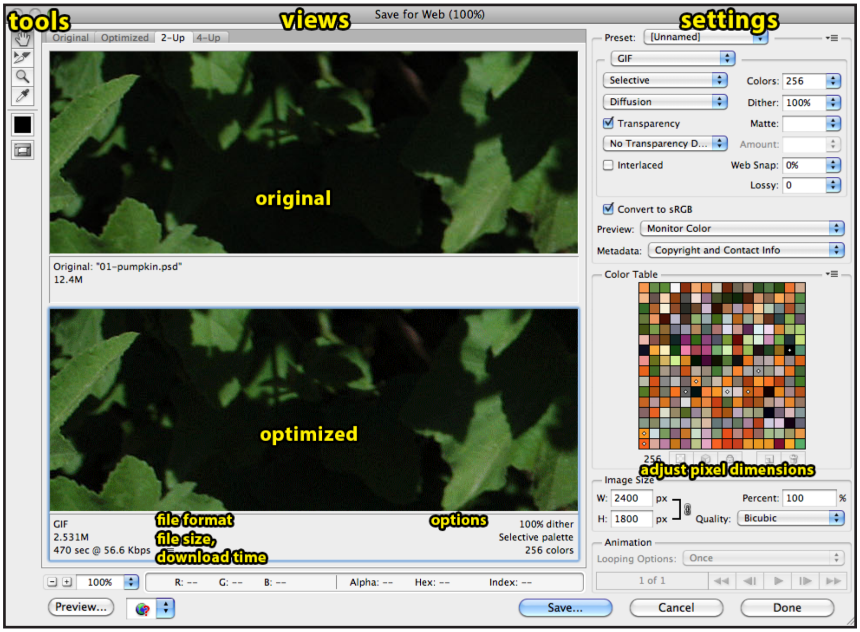
3. Big files don't display well when included in Web pages.

   That's because they take so long to become visible, and because they have more pixels than the width of the monitor. Your goal is to make files that can be viewed as an email attachment or in a Web browser without scrolling. The smallest standard monitors are 640 pixels wide and 480 pixels high. Monitors, thus, are landscape (wider than they are tall). Even for folks with larger monitors, operating system and browser controls such as menus and scroll bars take some room on the screen. To allow for those controls, try to keep your Web and emailed images in this course to 600 pixels in their largest dimension unless as assignment specifies otherwise.

Guided Exercise 2.2: Save a Duplicate File for the Web

Photoshop has a special command, **File > Save for Web,** that makes it easy to save a Web or email-ready copy of your image without modifying your original source image. This copy is known as an

OPTIMIZED version of the file. In this guided exercise you will save a Web copy of your finished pumpkin image.



1. Open **pumpkin1.psd** image if necessary.

2. Choose **File > Save for Web**.

   Save for Web opens this huge dialog box. We have clicked the **2-up** tab in **views** to show both the original and optimized versions.

   The active view tab is identified by the highlighted tab in the upper left region of the dialog box.

   Original shows only the original file.

   Optimized, the default, shows only the preview of the Web file with its current optimization settings (shown on the right side of the dialog box).

   2-Up splits the image into two panes, either side by side or top and bottom depending on the pixel dimensions of the original file. The left or top preview shows the original file, and the right or bottom view shows the optimized view for easy comparison.



   4-Up displays four versions of the image. The upper left image is the original. The upper right image is activated, as indicated by the colored line (Mac) or box (Win) around its preview.

   You can click any other panel to activate it. When you change the optimizations settings on the right side of the dialog box, those settings only affect the activated version.

3. Choose the **2-up** view**,** if it is not already chosen.

4. Identify the other major regions of the S**ave for Web** dialog box.



   a. The tools are in the upper left corner of the dialog box with the **Hand Tool** chosen by default. You will only use the **Hand Tool** and the **Zoom Tool** in this course.

      When a document is too large for the whole image to fit in its preview, only its upper left corner appears in the preview panel. It is difficult to tell the quality of your Web optimization in the dark leaf corner of this image. You can use the **Hand Tool** to move about in the image to an area with more detail.

      When you drag the **Hand Tool** in one pane, all the other panes also move, so that your preview regions stay comparable.

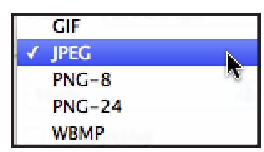
   b. The **settings** region is used to adjust the optimized Web file format settings to get a decent quality image with the smallest file size.

   c. The **Image Size** region lets you lower the total number of pixels in your Web copy so that it will load more quickly and look better on a Web page. We call this process "putting an image on a pixel diet."

   d. Underneath each preview is information about that version of the image. Here, we can see that with the default settings, this image will be in **(COMPUSERVE) GIF** format, be reduced from the original **12.4 M** (the size of the file without layers) to **2.49 M**, and that on a dialup modem (56 kb) it will take 462 seconds—or almost 8 minutes—to receive. (NOTE: your file and speed numbers may differ slightly from ours.)

5. Change the file format of the Web copy from **GIF** to **JPEG**.

   The default **GIF** format works well for images with just a few colors, like logos and type, that contain up to 256 colors. The **Color Table** just above the **Image Size** region, shows what those colors will be.



   a. Be sure the **Optimized** panel is the active one.

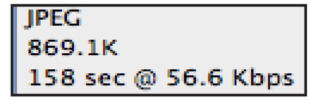
   b. In the **Settings** region change **GIF** to **JPEG** in the drop down menu just below **Preset**.

      The **Color Table** grays out because the **JPEG** file format (extension **.jpg**) supports millions of colors, not just 256, so it is better than **GIF** for preserving colors and detail in photographs and other continuous tone images.

The **JPEG** format also reduces the file size of most photographs more efficiently than does the **GIF** format.

c. Check the file size at the bottom of the optimized preview.

The **JPEG** is less than half the size of the **GIF**. With the default quality of 60, the Web copy will load in 158 seconds, taking about 2.5 minutes to receive instead of almost 8 minutes.



This transmission time is better, but the image is still too big for fast Web transmission. Studies show that viewers tend to navigate off of Web pages that take more than 30 seconds to view. So, let's keep that ***30 seconds*** as our target download speed.

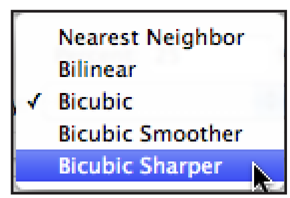
6. Reduce the number of pixels in the Web copy of the image to reduce its file size. (This image is so big that you can't even see the pumpkin in the **Save for Web** preview window.)



a. Locate the **Image Size** tab near the bottom of the right side of the dialog box.

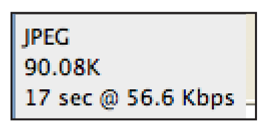
b. Change whichever dimension is larger, **W(idth)** here, to **600 pixels** and then press the **Tab** key to move the cursor to the next box.

When you type in the new width and press **Tab**, the **H(eight)** recalculates to keep the image proportional, and the preview changes on screen. This image will become 25% of its original size when the new size is applied, and you will now be able to see half of the jack-o'-lantern.



7. Choose the **Quality** Photoshop should use to change the **Image Size**. **Bicubic Sharper**, shown here, will usually give the best results when you shrink an image.

8. Check your file size at the bottom of the optimization preview. With fewer pixels it loads much more quickly.



9. Leave the other settings in the dialog box alone, as they are for more advanced users.

10. Save the file

a. Click **Save** to save the Web copy of your image using your chosen settings.

In the **Save Optimized As** dialog box that pops up next, notice that the image is already appended with **.jpg**, the three character extension for **JPEG** files.

Name your file, making sure you are saving the file in the correct location by using the top drop down menu.

b. Click **Save**.

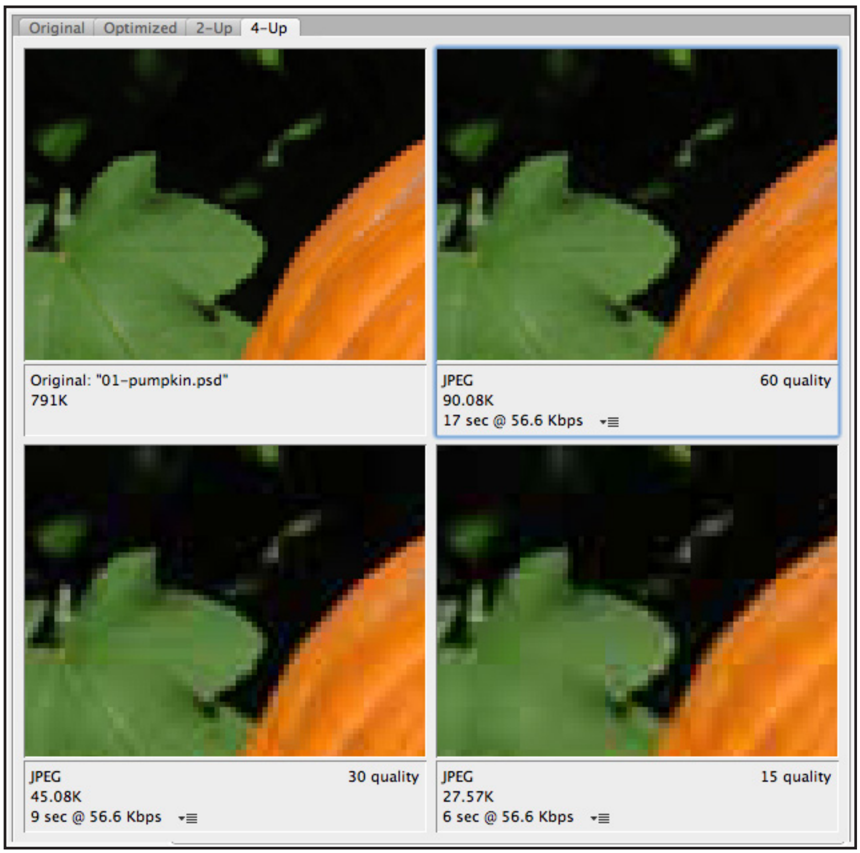
When you name files for Web or email use, it is recommended that you keep the names short (under 10 characters) and avoid spaces or punctuation in the file names.

The web-sized copy, in **JPEG** format, will be saved to the place you designated with the original, unchanged, document still open. Close the original if desired.

JPEG Quality



After reducing the image's pixel dimensions, the next step is to adjust the **JPEG Quality,** the amount that the image is compressed by approximating its color transitions mathematically rather than using the actual image pixels.



The extent to which the image distorts depends upon the color transitions of the original image, and are most noticeable with abrupt color changes. The distortion is called **JPEG ARTIFACTING**.

If you change your view from **2 up** to **4 up**, the additional previews will show your image with increasingly strong amounts of **jpeg artifacting**, and also decreasing file sizes (trading off file size for quality).

The **JPEG** artifacting becomes more apparent if you raise the default **100%** view to **400%** at the bottom of the dialog box.

In our experience, for images that are about 600 pixels in their larger dimension, adjusting the **Quality** until the file is between **85KB** and **99KB** will give a professional quality Web file that still loads quickly.

In most cases you should avoid **Maximum Quality**. This setting is designed to compress big, print sized files, to send to commercial print houses for publication—not for Web work. Changing the pumpkin to **Maximum Quality** or **100%** increases the file size to **327.4 kb**—even bigger than before it went on its pixel diet. It will take a full minute to load, and might make Web viewers or email recipients unhappy.

How Big is Your File?

The **SIZE** of an image can have two different values:

- **DIMENSION SIZE**: the size an image would print out (inches for the US English version of Photoshop)
- **FILE SIZE**: the space an image takes up on a hard drive or disk in bytes, kilobytes, or megabytes

A **BIT** is the smallest unit of information on a computer. A **BYTE** is made up of 8 bits. A **KILOBYTE** (**K** or **KB**) is roughly 1,000 bytes (1,024) and a **MEGABYTE** (**M** or **MB**) is 1,024 kilobytes.

When you compress an image to send by email or put up on the Web, you need a small file that will download quickly. Usually, you will be looking at kilobytes (K or KB) unless the image is extremely small, then it will be in bytes. Images that are 1 MB or more are generally considered too large for Internet transmission. We recommend that you try to keep all course files you will send on the Web to under 100 KB unless otherwise specified.

If you want to check the size of a file after you make it, view its **Properties** (Win) or **Get Info** (Mac) from the Desktop. When you open a **JPEG** file in Photoshop, it temporarily expands for editing. Thus the **89 K JPEG** we just made opens to **791 K**.

On Your Own

We're going to cover this twice because it is such a common problem for both new and experienced Photoshop users.

Avoid the Most Common Save for Web Mistake

Examine these settings.



Although this image was placed on a pixel diet to reduce its overall pixel dimensions, its **JPEG** compression setting of **100 quality** is not strong enough and its file size of **327.4K** is too large for Web and email attachments.

Follow this strategy to avoid this common mistake:

1. Reduce the number of pixels in the **Image Size** section of the **Save for Web** dialog box.
2. Check the file size of your image.
3. Gradually reduce the quality of the image until it is small enough to meet your Web guidelines.

Another problem we often see is that folks apply the **JPEG** compression very strongly, assuming that it is best to make the smallest file possible. As you can see from the previous page, at a **Quality** of **15**, the pumpkin image artifacts badly, seriously diminishing its appearance.

It's a balancing act: file size for quick transmission vs. image quality.

Resources

Here are two **Save for Web** videos. They were both recorded on earlier versions of Photoshop where the dialog box was called **Save for Web & Devices**.

- http://www.youtube.com/watch?v=xLs2Qqa1mJw
- http://www.deke.com/content/photoshop-top-40-feature-34-save-web-and-devices